ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 417]

SOAP AND DETERGENT MANUFACTURING POINT SOURCE CATEGORY

Effluent Limitations Guidelines

Notice is hereby given that effluent limitations guidelines for existing sources and standards of performance and pretreatment standards for new sources set forth in tentative form below are proposed by the Environmental Protection Agency (EPA) for the soap manufacturing by batch kettle subcategory (Subpart A), the fatty acid manufacturing by fat splitting subcategory (Subpart B), the soap manufacturing by fatty acid neutralization subcategory (Subpart C), the glycerine concentration subcategory (Subpart D), the glycerine distillation subcategory (Subpart E), the manufacture of soap flakes and powders subcategory (Subpart F), the manufacture of bar soaps subcategory (Subpart G), the manufacture of liquid soaps subcategory (Subpart H), the oleum sulfonation and sulfation subcategory (Subpart I), the air–SO_3 sulfation and sulfonation subcategory (Subpart J), the SO_3 solvent and vacuum sulfonation subcategory (Subpart K), the sulfamic acid sulfation subcategory (Subpart L), the chlorosulfonic acid sulfation subcategory (Subpart M), the neutralization of sulfuric acid esters and sulfonic acids subcategory (Subpart N), the manufacture of spray dried detergents subcategory (Subpart O), the manufacture of liquid detergents subcategory (Subpart P), the detergent manufacturing by dry blending subcategory (Subpart Q), the manufacture of drum dried detergents subcategory (Subpart R), and the manufacture of detergent bars and cakes subcategory (Subpart S), of the soap and detergent maunfacturing category of point sources pursuant to the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, 1311, 1314 (b) and (c), 1316(b) and 1317(c); 86 Stat. 816 et seq.; P.L. 92–500) (the "Act").

LEGAL AUTHORITY

(1) *Existing point sources.* Section 301(b) of the Act requires the achievement by not later than July 1, 1977, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of the best practicable control technology currently available as defined by the Administrator pursuant to section 304(b) of the Act. Section 301(b) also requires the achievement by not later than July 1, 1983, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of best available technology economically achievable which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants, as determined in accordance with regulations issued by the Administrator pursuant to section 304(b) to the Act.

Section 304(b) of the Act requires the Administrator to publish regulations providing guidelines for effluent limitations setting forth the degree of effluent reduction attainable through the application of the best practicable control technology currently available and the degree of effluent reduction attainable through the application of the best control measures and practices achievable including treatment techniques, process and procedure innovations, operating methods and other alternatives. The regulations proposed herein set forth effluent limitations guidelines, pursuant to section 304(b) of the Act, for the soap and detergent manufacturing category.

(2) *New sources.* Section 306 of the Act requires the achievement by new sources of a Federal standard of performance providing for the control of the discharge of pollutants which reflects the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.

Section 306(b)(1)(B) of the Act requires the Administrator to propose regulations establishing Federal standards of performance for categories of new sources included in a list published pursuant to section 306(b)(1)(A) of the Act. The Administrator published in the FEDERAL REGISTER of January 16, 1973, (38 FR 1624) a list of 27 source categories, including the soap and detergent manufacturing category. The regulations proposed herein set forth the standards of performance applicable to new sources for the soap and detergent manufacturing category.

Section 307(c) of the Act requires the Administrator to promulgate pretreatment standards for new sources at the same time that standards of performance for new sources are promulgated pursuant to section 306. Sections 417.15, 417.25, 417.35, 417.45, 417.55, 417.65, 417.75, 417.85, 417.95, 417.105, 417.115, 417.125, 417.135, 417.145, 417.155, 417.165, 417.175, 417.185 and 417.195 proposed below provide pretreatment standards for new sources within the soap and detergent manufacturing category.

Section 304(c) of the Act requires the Administrator to issue to the States and appropriate water pollution control agencies information on the processes, procedures or operating methods which result in the elimination or reduction of the discharge of pollutants to implement standards of performance under Section 306 of the Act. The Development Document referred to below provides, pursuant to section 304(c) of the Act, information on such processes, procedures or operating methods.

SUMMARY AND BASIS OF PROPOSED EFFLUENT LIMITATIONS GUIDELINES FOR EXISTING SOURCES AND STANDARDS OF PERFORMANCE AND PRETREATMENT STANDARDS FOR NEW SOURCES

(1) *General methodology.* The effluent limitations guidelines and standards of performance proposed herein were developed in the following manner. The point source category was first studied for the purpose of determining whether separate limitations and standards are appropriate for different segments within the category. This analysis included a determination of whether differences in raw material used, product produced, manufacturing process employed, age, size, waste water constituents and other factors require development of separate limitations and standards for different segments of the point source category. The raw waste characteristics for each such segment were then identified. This included an analysis of (1) the source, flow and volume of water used in the process employed and the sources of waste and waste waters in the operation, and (2) the constituents of all waste water. The constituents of the waste waters which should be subject to effluent limitations guidelines and standards of performance were identified.

The control and treatment technologies existing within each segment were identified. This included an identification of each distinct control and treatment technology, including both in-plant and end-of-process technologies, which are existent or capable of being designed for each segment. It also included an identification of, in terms of the amount of constituents and the chemical, physical, and biological characteristics of pollutants, the effluent level resulting from the application of each of the technologies. The problems, limitations and reliability of each treatment and control technology were also identified. In addition, the non-water-quality environmental impact, such as the effects of the application of such technologies upon other pollution problems, including air, solid waste, noise and radiation, was identified. The energy requirements of each control and treatment technology were determined as well as the cost of the application of such technologies.

The information, as outlined above, was then evaluated in order to determine what levels of technology constitute the "best practicable control technology currently available," the "best available technology economically achievable" and the "best available demonstrated control technology, processes, operating methods, or other alternatives." In identifying such technologies, various factors were considered. These included the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes,

non-water-quality environmental impact (including energy requirements) and other factors.

The data upon which the above analysis was performed included EPA permit applications, EPA sampling and inspections, consultant reports, and industry submissions.

The pretreatment standards proposed herein are intended to be complementary to the pretreatment standards proposed for existing sources under 40 CFR Part 128. The basis for such standards is set forth in the FEDERAL REGISTER of July 19, 1973, 38 FR 19236. The provisions of Part 128 are equally applicable to sources which would constitute "new sources," under section 306 if they were to discharge pollutants directly to navigable waters, except for § 128.133. That section provides a pretreatment standard for "incompatible pollutants" which requires application of the "best practicable control technology currently available," subject to an adjustment for amounts of pollutants removed by the publicly owned treatment works. Since the pretreatment standards proposed herein apply to new sources, §§ 417.15, 417.25, 417.35, 417.45, 417.55, 417.65, 417.75, 417.85, 417.95, 417.105, 417.115, 417.125, 417.135, 417.145, 417.155, 417.165, 417.175, 417.185 and 47.195 below amend § 128.133 to require application of the standard of performance for new sources rather than the "best practicable" standard applicable to existing sources under sections 301 and 304(b) of the Act.

(2) Summary of conclusions with respect to the soap and detergent manufacturing category of point sources.

(i) *Categorization.* For purposes of studying the industry and developing effluent limitations guidelines for existing sources and standards of performance, the soap and detergent industry has been divided into nineteen discrete subcategories based on raw materials input, process employed and finished products manufactured. The subcategories also reflect differences in waste waters produced and appropriate control technologies. The subcategories cover: (a) Two paths for production of the intermediate neat soap (60-70 percent soap in water), one entailing a single subcategory (soap manufacturing by batch kettle) and the other encompassing two (fatty acid manufacturing by fat splitting and soap manufacturing by fatty acid neutralization); (b) recovery of by-product glycerine from kettle boiling and fat splitting, encompassing two subcategories (glycerine concentration and glycerine distillation); (c) three methods production of sulfuric acid esters and sulfonic acids (surfactant intermediates); (e) one subcategory for neutralization of sulfuric acid esters and sulfonic acids to produce finished surfactants for inclusion in detergents; and (f) four subcategories encompassing the methods of producing finished and marketable detergents.

(1) Subpart A—Soap Manufacturing by Batch Kettle Subcategory: The chemistry of soap making is simple. However, its physical chemistry is complex and will be explored to some extent in the discussion of bar soaps.

The fundamental reaction of soap chemistry can be stated as:

Fat + Caustic ____ Soap + Glycerine

Fats and oils used in soap making are of both animal and vegetable origin. Such animal-derived sources as tallow are most common. Of the vegetable oils, coconut, palm, and tall are the most popular.

Experience has shown that the optimum range of carbon chain length of fatty acids used in soap manufacture ranges from 12 to 18. As a curiosity of nature, the acids occur naturally only in even numbers of carbon atoms in the fats used commercially.

Most of the soap made by this process finds its way into toilet bar form for household usage. This use demands freedom from offensive odors and displeasing colors. In order to meet this requirement, the starting fats and oils must be refined. There is a direct relationship between quality of the fats and the quality of the finished soap.

(a) Fat Refining and Bleaching. There are several ways in which fats are refined. One of the most frequently used methods employs activated clay as the extraction agent. Activated clay, having a large ratio of surface area to weight, is agitated with warm oil and filtered. Color bodies, dirt, etc., are removed, usually through a plate and frame press. The clay is disposed of as solid waste. A small amount of clay remains in the refined fat.

The clay is often "activated" by being given an acid treatment itself by the clay supplier and is a source of sulfate ion built-up in some soap recycling streams.

Other ways in which fats are refined include caustic extraction, steam stripping and proprietary aqueous chemicals.

When soap accounted for the major portion of the soap and detergent market the Soloxol process of extraction found use in refining of fats and oils. The design of this liquid propane extraction process is based on the diminishing solubility of fats in liquid propane with increasing temperature. The fats are completely miscible at 48.84°C (120°F) but become almost insoluble at 82°C (180°F) and most of the color bodies precipitate.

Color bodies fall to the bottom of the treating tower while decolorized oils dissolved in liquid propane sit on the solvent (liquid propane) layer and are recovered from the top. This process is not now used in the United States, but should be reexamined since it offers a way to eliminate water use and thus could again become economical as discharges must be reduced.

(b) Soap Boiling: Although a very old process, kettle boiling still makes a very satisfactory product and in several well integrated manufacturing plants this process has a very low discharge of waste water effluents.

Making a batch of neat soap (65–70 percent soap in water) can take as long as four to six days to complete. A series of large steel tanks are used in a counter current manner to "boil" soap. Their capacity can be as high as 54,480 kg (120,000 lb) of ingredients. Ever weakening caustic streams are met by enriched fat so that the caustic is essentially exhausted in the presence of fresh fat. In actual practice the fat never leaves the tank in which it starts until it is converted into neat soap. Just the aqueous caustic stream flows from tank to tank.

The waste water from kettle boiling is essentially from the nigre stream. The nigre is the aqueous layer which contains the color bodies generated in the soap-making process, mostly dark soaps. They are often marketed as industrial lubricants or low grade special purpose soaps. Where such a market can be established a kettle boil soap process is already at the zero discharge effluent level except for the oil refining step.

(c) Salt Usage: In order to maintain suitable solubility for proper processing, salt is added to the soap making process to maintain the required electrolytic balance. Most of the salt charged into the process is ultimately returned to it from the glycerine concentration step, which will be discussed later. Practically every kettle boiling soap manufacturer concentrates his glycerine stream although only a few go on to the distillation of glycerine.

(2) Subpart B—Fatty Acid Manufacturing by Fat Splitting. By means of fat splitting very low grade fats and oils are upgraded to high value products by splitting the glycerides into their two components, fatty acids and glycerine. Fat splitting is a hydrolytic reaction which proceeds as follows:

Fat + Water____Fatty Acid + Glycerine

Using a Twitchell catalyst (an aromatic sulfonic acid) and a long residence time, fats can be split at nearly atmospheric pressures. Today, however, most fat splitting takes place in a high pressure, high temperature tower operated at around 34 atm (500 psig) and a temperature of 260°C (500°F).

Heated fat, 254°C (490°F) and under pressure, is fed into the bottom of the tower and water, 204°C (400°F) and also under pressure, is fed into the top.

The two streams mix counter-currently and hydrolysis takes place, often in the presence of a zinc or tin catalyst. At the high temperatures employed the fat is soluble to the extent of 12–25 percent of water, depending upon which fat is used.

In about 90 minutes the splitting can be as high as 99 percent complete. The glycerine by-product can be produced at a variety of concentrations depending upon how complete a fat hydrolysis is desired. More concentrated glycerine can be provided at some expense of fatty acid yields.

The crude acids are flashed in a pressure reducer and then distilled at 0.025–035 atm pressure. The resulting product often is subjected to a flash hydrogenation to reduce the amount of linoleic and linolenic acids.

(3) Subpart C—Soap Manufacturing by Fatty Acid Neutralization Subcategory: Soap making by fatty acid neutralization exceeds the kettle boil process in speed and minimization of waste water effluent. It is widely used by the large soap producers and also very popular with the smaller manufacturers.

This route from the acids is faster, simpler (no by-product dilute glycerine stream to handle) and "cleaner" than the kettle boil process. Distilled, partially hydrogenated acids are usually used.

The fatty acid neutralization process has several additional advantages over the kettle boiling process. It does not have a large salt load to recycle, and has a free alkali concentration in the order of 0.1–0.2 percent, contrasted with around 1 percent measured as Na20 in the kettle boiling process.

The reaction that takes place is substantially:

Caustic+Fatty Acid____Soap

Often, sodium carbonate is used in place of caustic with the attendant evolution of carbon dioxide. When liquid soaps (at room temperature) are desired, the more soluble potassium soaps are made by starting with potassium hydroxide. The potassium soaps are used in the familiar liquid hand soap dispensers, in many industrial applications and often as lubricants.

As in kettle boiling soap manufacture, the most popular mix of acids for bar soap is 20 percent coconut oil and 80 percent tallow oil derived acids. A number of distilled tall oil soaps (tall oil is derived from the waste streams of paper manufacture) are also made for industrial purposes.

In some cases, the soap making process is operated continuously in tandem with a fat splitting process. The fatty acids and caustic solution are proportioned into a reactor continuously by pumps having a common variable speed drive. The appropriate amount of salt is also programmed in to maintain the correct electrolyte content.

The resulting neat soap will have about 30 percent moisture and around 0.5 percent salt.

To clarify the soap solution, the soap stream coming out of the reactor is sometimes filtered with clay. The spent clay creates a certain amount of solid waste and the filter press is washed out occasionally. Otherwise this is a "clean" process.

The neat soap is further processed into bars or liquid formulations in the same manner as the product from kettle boiling.

(4) Subpart D—Glycerine Concentration Subcategory: The kettle boiling soap process generates an aqueous stream referred to as sweet water lyes. This stream will contain 8–10 percent glycerine, a heavy salt concentration and some fatty materials. It is processed by first adding a mineral acid (HCl) to reduce the alkalinity. This is followed by the addition of alum which precipitates insoluble aluminum soaps. The precipitate caries other impurities down with it. If the stream were not treated with alum, there would be severe foaming in the evaporators, and the contaminant would be caried forward into the glycerine. The cleaned glycerine solution is sent to the evaporators.

The evaporators (in some smaller plants there will be only one) are heated under reduced pressure. The partial vacuum is generated by a barometric condenser. They frequently operate at 0.15–0.07 atm (26–28 in Hg vacuum).

As the glycerine is concentrated the salt comes out of solution and is removed from the evaporation kettle, filtered and returned to the soap making process. In many plants this separating function is performed continuously with a centrifuge with the filtrate being returned to the evaporator.

The glycerine is usually concentrated to 80 percent by weight and then either run to a still to be made into finished glycerine, of stored and sold to glycerine refiners.

The barometric condenser used in concentrating will be slightly rich in BOD5 due to the carryover of glycerine.

(5) Subpart E—Glycerine Distillation Subcategory. The concentrated glycerine (80 percent) is run into a still which, under reduced pressure, yields a finished product of 98+ percent purity. Here again a barometric condenser is used to create the partial vacuum.

At room temperature, the still bottoms (also called glycerine foots) are a glassy dark brown amorphous solid rather rich in salt. Water is mixed with the still bottoms and run into the waste water stream. This particular stream is very rich in BOD5, and readily biodegradable. Many alternative methods of disposal, including incineration, have been evaluated, but the general practice of the industry is disposal in a waste water stream.

The other waste water stream, the barometric condenser water, will also contribute to the total BOD5 and COD loads caused by the glycerine foots.

The sweet water glycerine from fat splitting is flashed to atmospheric pressure thereby releasing a considerable amount of water very quickly. This can provide a glycerine stream going to the evaporators of 20 percent glycerine or more. Since there is no salt used in fat splitting there will be none in the sweet water.

Some glycerine refining is done by passing the dilute stream over ion exchange resin beds, both cationic and anionic, and then evaporating it to 98+ percent glycerine content as a bottoms product. This method is suitable where there are copious quantities of water available and energy costs are very high.

In the backwash of the ion exchange process the organic suspended solids are stripped from the system. The regeneration cycle of both types of beds will add a significant dissolved solids load to the waste water system.

There are frequently three sets, in series, of both cation and anion exchange resins used in this process. Each step is designed to reduce the input load by 90 percent. Some of the fat splitting plants are equipped with this type of unit.

(6) Subpart F—Manufacture of Soap Flakes and Powders Subcategory. Neat soap, previously defined, may or may not be blended with other products before flaking or powdering. Neat soap is sometimes filtered to remove gel particles and run into a crutcher for mixing with builders.

After thorough mixing, the finished formulation is run into a flaker. This unit normally consists of a two roll "mill" having two steel rolls. The small upper one is steam heated while the larger lower one is chilled. The soap solidifies on the lower one and is slit into ribbons at it sheets off the roller.

The ribbons are fed into a continuous oven heated by hot air. The emerging flakes contain 1 percent moisture. As all of the evaporated moisture goes to the atmosphere, there is no waste water effluent.

In spray drying, crutched, heated soap solution is sprayed into a spray tower, or flash dried by heating the soap solution under pressure and releasing the steam in the spray drier under reduced pressure. In either case the final soap particle has a high ratio of surface area to unit of weight, which makes it readily dissolvable in water.

Some operations will include a scrap soap reboil to reclaim soap. The soap reboil is salted out for soap recovery and the salt water is recycled. After frequent recycling the salt water becomes so contaminated that it must be discharged to the sewer.

Occasional washdown of the crutcher may be needed. The tower is usually cleaned down dry. There is also some gland water which flows over the pump shaft picking up any minor leaks. This will contribute a very small, but finite, effluent loading.

(7) Subpart G—Manufacture of Bar Soaps Subcategory. The procedure for bar soap manufacture will vary significantly from plant to plant, depending upon the particular clientele served. The following description typifies bar soap manufacture.

In some processes additives are mixed with the neat soap in a crutcher before any drying takes place. Another approach is to begin the drying process with the hot neat soap going to an "atmospheric" flash dryer followed by a vacuum drying operation in which the vacuum is drawn by a barometric condenser. Soap is then double extruded into short ribbons or curls and sent to plodders for further blending or physical processing. At this point the soap will normally have 8–14 percent moisture

depending upon the previous course of processing.

Next, a milling operation affords the opportunity to blend in additives as well as modify the physical properties of the soap. This operation has much more significance than just achieving uniformity in the mixing of further added ingredients. The physical chemistry of soap is fairly complex. Unless a bar of soap is almost predominately left in the Beta phase, as distinct from the Omega phase, long range solubility, warping resistance, and lathering properties are poor. Rapid chilling of the soap puts it predominately into the Omega phase but successive milling steps bring it back into Beta phase; hence the importance of milling.

The mill consists of two polished rolls rotating at different speeds to maximize the shearing forces. After milling, the soap is cut into ribbons and sent to the plodder.

The plodder operates much like a sausage grinder. It thus extrudes and cuts the soap into small chips, followed by further mixing in which all of the individual pieces are melted together into a homogenous mass. The plodder is often operated under reduced air pressure so that any occluded air is removed in the blending process. It has a powerful screw that forces the soap through minute holes in a perforated plate.

Plodding completed, the soap is extruded continuously in a cylindrical form, cut to size, molded into the desired form, and wrapped for shipment. Most of the scrap in this operation is returned to the plodder.

At times there will be soap scrap which has become too dry to process properly in the plodder and it must be returned to earlier steps in the soap making process.

The amount of water used in bar soap manufacture varies greatly. In many cases the entire bar soap processing operation is done without generating a waste water stream. The equipment is all cleaned dry without any washups. In other cases, due to housekeeping requirements associated with the particular bar soap process, there are one or more waste water streams from air scrubbers.

Since we are dealing with a consumer product with very distinct (and important to the consumer) esthetic properties, all of these processes can claim significance and essential character in the making of a particular bar.

Occupying a very minor position in the soap market, a bar made from cold frame soap may be found. After the saponification reaction, this soap is poured directly from the reactor into molds. Upon cooling and the completion of saponification, the molded soap is cut into bars. The entire operation is carried out without the generation of any waste water.

(8) Subpart H—Manufacture of Liquid Soaps Subcategory. Neat soap (often the potassium soap of fatty acids) is blended in a mixing tank with other ingredients such as alcohols or glycols to produce a product, or with pine oil and kerosene for a product with greater solvency and versatility. The final blended product may be, and often is, filtered to achieve a sparkling clarity before being drummed.

In making liquid soap, water is used to wash out the filter press and other equipment. Waste water effluent is minimal.

(9) Subpart I—Oleum Sulfonation and Sulfation Subcategory. One of the most important active ingredients of detergents is the alcohol sulfate or alkyl benzene sulfonate—and particularly those products made via the oleum route.

In most cases the sulfonation/sulfation is carried out continuously in a reactor where the oleum (a solution of sulfur trioxide in sulfuric acid) is brought into intimate contact with the hydrocarbon or alcohol. Reaction is rapid. The stream is then mixed with water and sent to a settler.

Prior to the addition of water the stream is a homogeneous liquid. With the addition of water, two phases develop and separate. The dilute sulfuric acid is drawn off and usually returned to an oleum manufacturer for reprocessing up to the original strength. The sulfonated/sulfated material is sent on to be neutralized with caustic.

This process is normally operated continuously and performs indefinitely without need for periodic clean out. Pump glands occasionally leak. Anticipating this problem, a stream of water is normally played over pump shafts to pick up such a leak if it occurs, as well as to cool the pump. The flow of waste water from this source is quite modest but continual.

(10) Subpart J—Air-So*3* Sulfation and Sulfonation Subcategory. This process for surfactant manufacture has numerous unique advantages and is used extensively. In the oleum sulfation of alcohols, formation of water stops the reaction short of completion because it reaches a state of equilibrium, resulting in low yields.

With SO*3* sulfation, no water is generated, hydrolysis cannot occur and the reaction proceeds in one direction only.

The absence of water in the SO*3* reaction is of a lesser importance in sulfonation. What is particularly troublesome in the use of oleum for alcohol sulfation is that water cannot be used for oleum separation due to the potential hydrolysis that would take place. Even if this were not a problem, no phase separation of the components takes place with the addition of water to sulfated alcohols in oleum.

SO*3* sulfonation and sulfation is also quite amenable to batch processing and in this manner can produce products having a minimum of sodium sulfate (all of the excess of SO*3*, or sulfuric acid in the case of oleum sulfonation, will be converted into sodium sulfate in the neutralization step with caustic).

Care must be exercised in the SO*3* process to control reaction conditions—particularly temperature—to minimize char formation and possible sulfonation of the hydrocarbon chain of the alcohol.

Another advantage of the SO*3* process is its ability to successively sulfate and sulfonate an alcohol and a hydrocarbon respectively.

Because of this reaction's particular tendency to char the product, the reactor system must be cleaned thoroughly on a regular basis. In addition there are usually several airborne sulfonic acid streams which must be scrubbed, with the waste water going to the sewer during sulfation.

SO*3* can be generated at the plant by burning sulfur or sulfur dioxide with air instead of obtaining it as a liquid.

(11) Subpart K—SO*3* Solvent and Vacuum Sulfonation Subcategory. Undiluted SO*3* and organic reactant are fed into the vacuum reactor through a mixing nozzle (vacuum maintained at 0.06 atm (5'' Hg). Recycle is accomplished by running the flashed product through a heat exchanger back into the reactor. The main advantage of the system is that under vacuum the SO*3* concentration and operating temperature is kept low, thereby assuring high product quality. Offsetting this is the high operating cost of maintaining the vacuum.

(12) Subpart L—Sulfamic Acid Sulfation Subcategory. Sulfamic acid is a mild sulfating agent and is used only in very specialized quality areas because of the high reagent price. The system is of particular value in the sulfonation of ethoxylates.

The small specialty manufacturer may use this route to making high quality alcohol sulfates, equivalent in quality to those from the chlorosulfonic acid route, substituting high reagent cost for high capital costs of the chlorosulfonic route.

(13) Subpart M—Chlorosulfonic Acid Sulfation Subcategory. For products requiring high quality sulfates, chlorosulfonic acid is an excellent agent. It is a mild sulfating agent, yields no water of sulfation and generates practically no side reactions. It is a corrosive agent and generates HCl as a byproduct.

An excess of about 5 percent chlorosulfonic acid is often used. It will yield an inorganic salt upon neutralization which is undesirable in some applications as it can result in salt precipitation in liquid formulations, etc.

(14) Subpart N—Neutralization of Sulfuric Acid Esters and Sulfonic Acids Subcategory. This step is essential in the manufacture of detergent active ingredients; it converts the acidic hydrophylic portion of the molecule to a neutral salt.

Alcohol sulfates are somewhat more difficult to neutralize than the alkylbenzene sulfonic acids due to the sensitivity of hydrolysis of the alcohol derivative. For this reason, neutralization is usually carried out at a pH above 7 and as rapidly as possible.

This is not difficult using continuous neutralization but it is more of a problem in the batch process unless excellent stirring is available.

As a result of hydrolysis occurring in the neutralization step, there will be

some free alcohol generated which would be picked up in the oil and grease analysis. As a product this is not all bad since the free alcohol can actually be considered a foam stabilizer in some situations. If used in heavy duty products, the alcohol tends to be lost in the spray tower.

(15) Subpart O—Manufacture of Spray Dried Detergents Subcategory. Here is an other critical area of detergent manufacture. In this segment of processing, the neutralized sulfonates and sulfates are brought to the crutcher where they are blended with requisite builders and additives. From here the slurry is pumped to the top of a spray tower of about 4.5–6.1m (15–20 ft) in diameter by 45–61m (150–200 ft) high where nozzles around the top spray out detergent slurry of approximately 70 percent concentrations.

A large volume of hot air enters the bottom of the tower rising to meet the falling detergent. For low density products, hot gas and powder flow concurrently downward.

This step is critical in that the detergent particles' shape, size and density are determined by all of the design preparation made previously, and the shape and size in turn will largely determine dusting and the solubility rate of the detergent itself in the washing process.

The air coming from the tower will be carrying dust particles which must be essentially eliminated to meet air quality standards.

Due to product change and buildup of combustible deposits, the spray towers are periodically shut down and cleaned. This practice varies from two or three times a week to once in two weeks or longer. One thing that all tower operations share is the cleaning process. First, the easily available material sticking on the tower walls is scraped to be recycled if at all possible, or sent on to solid waste.

Men are sent into the tower with abrading equipment to continue the dry cleaning process. Here again, the product is usually preserved for reuse or disposed of as solid waste.

Finally, the tower is thoroughly washed down by spraying streams all over the inside surface. The final step is mandatory since the detergent manufacturers must be very careful to avoid any mixing of any phosphate-nonphosphate formulations, white with colored systems or anionic with nonionic formulations.

The mixing problem is compounded somewhat by the fact that some detergent manufacturers custom process for a variety of marketers which requires more frequent spray tower "turnaround."

Waste water streams are rather numerous. They include many washouts of equipment from the crutchers to the spray tower itself. One waste water flow which has one of the highest loadings is that of the air scrubber which cleans and cools the hot gases existing from this tower. This is only one of several units in series utilized to minimize the particulate matter being sent into the atmosphere.

All of the plants recycle some of the waste water generated. Some of the plants recycle all of the flows generated.

Due to increasingly stringent air quality requirements, we can expect that fewer plants will be able to maintain a complete recycle system for all water flows in the spray tower area. In the case of the fast "turnaround" tower, they too are unable to utilize all of their scrubber and other washwaters.

After the powder comes from the spray tower it is further blended and then packaged. Solid wastes from this area are usually recycled.

(16) Subpart P—Manufacture of Liquid Detergents Subcategory. Sulfonated and sulfated products produced in processes described in subcategories I through N are pumped into mixing tanks where they are blended with numerous additional ingredients, ranging from perfumes to dyes. From here, the fully formulated liquid detergent is run down to the filling line.

The filling line usually consists of a long conveyor which passes many stations. Each station performs a given task such as filling, capping, checking weight, labeling, etc. Often, soap solutions are used to lubricate the conveyor so that the bottles flow smoothly past the various stations.

Whenever the filling line is to change to a different product, the filling system must be thoroughly cleaned out. This is equally true of the mixing equipment. Properties of differing products are often so contrasting that there must be no cross contamination; otherwise the performance and other specifications cannot be met.

To avoid this problem the mixing equipment and all filling plumbing is thoroughly flushed with water until it runs clear.

(17) Subpart Q—Detergent Manufacturing by Dry Blending Subcategory. Fully dried "active" (surfactant) materails are blended with additives, including builders, in dry mixers. In the more sophisticated plants mixing time is utilized to the maximum by metering components into weighing bins prior to loading into mixers. When properly mixed, the homogeneous dry product is packed for shipment.

Normal operation will see many succeeding batches of detergent mixed in the same equipment without anything but dry cleaning. This procedure is followed until the next formulation to be blended is one which must not be contaminated with even a negligible amount of the previously prepared product. At this time the equipment must be completely washed down.

For this reason, a modest amount of waste water is required for the blender to maintain specification requirements.

The products fulfill a wide variety of industrial cleaning uses from dairy cleaning to box car washing. They are also used to some extent in household products.

(18) Subpart R—Manufacture of Drum Dried Detergents Subcategory. Drum drying of detergents is an old process. Much of the equipment still in use is well over thirty years old. The process yields a fairly friable product which can become quite dusty with any extensive handling.

There are several types of drum driers; one type has double rotating heated drums with liquid feed coming onto the space above and between the rolls. Another type is the twin-drum dryer with dip or flash feed. (The dip feed is a pan containing liquid feed into which the bottom of the roll or drum is dipped to pick up material to be dried).

The thin layer is removed continuously by a knife blade onto conveyors. The powder is substantially anhydrous. Vapors coming off are often collected and removed through a vapor head between the drums.

The rolls of a drum dryer are often 0.6–1.8 m (2–6 ft) in diameter and 0.9–4.5 m (3–15 ft) long with revolution speeds of 5–10 rpm. About 6–15 seconds residence time is provided the slurry on hot metal surface, which is short enough to avoid degradation of heat sensitive products.

As an example of the limitations of drying capacity, the capacity of the drum varies between 4.5–48.8 kg of finished product per sq m of drying surface per hour (1–10 lb per sq ft per hour).

This operation would be essentially free of generation of waste water discharge other than an occasional washdown.

(19) Subpart S—Manufacture of Detergent Bars and Cakes Subcategory. In answer to the need for a bar soap which performs satisfactorily in hard water, the detergent industry manufactures and markets detergent bars. They constitute about 20 percent of the toilet bar market.

There are two types of "detergent" bars, those made of 100 percent synthetic surfactant and those blending synthetic surfactant with soap.

Once the active ingredients have been manufactured they are blended in essentially the same manner and in similar type of equipment used for conventional soap.

Due to the sensitive nature of the surfactant portion of the detergent bar, fairly frequent cleanups, including equipment washdowns, are required. Otherwise thermally degraded surfactant will contaminate the bar, leading to such undesirable properties as stickiness and off-color.

(ii) Waste characteristics. The pollutants contained in the raw waste waters of the soap and detergent manufacturing category arise from leaks, spills, cleaning of process equipment, scrubbing of stack or vent emissions, and entrainment in barometric condensers. Potentially, any raw material, by-product, catalyst, intermediate material, or finished product associated with the industry may be found in the raw waste water. These would include both organic (e.g., fats, oils, soaps, glycerine, alkyls, alcohols,

ethoxylates and surfactants) and inorganic materials (e.g., chlorides, phosphates, silicates, sulfates, carbonates, zinc, borates, and hydrochloric and sulfuric acids), with the former being the more important group.

Pollutants or pollution characteristics which have been selected as significant and subject to limitations are BOD5, COD, total suspended non-filterable solids, oil and grease, surfactants and pH. Other pollutants and pollutant characteristics are either effectively controlled by the treatment and control that is necessary to meet the proposed limitations or present at such low levels as not to be significant.

Waste characteristics associated with raw discharges of the subcategories are as follows:

(1) Subpart A—Soap Manufacturing by Batch Kettle Subcategory. Kettle boiling soap, including pretreatment of the fats and oils, is a batch process and water use is intermittent. Instantaneous flows of 0.12–18.9 l/sec (2–300 gpm) are experienced. Over-all water use can be limited to 623 l/kkg (75 gal/10000 lb) of soap, but as much as 2080 l/kkg (250 gal/1000 lb) is used.

Waste waters from fat and oil pretreatment and kettle boiling will contain some fats, oils and other organics, inorganic salts, and inert materials such as clay. Thirty-day averages for the best operations are on the order of 6 kg of BOD5, 10 kg of COD, 4 kg of total suspended non-filterable solids, and 0.9 kg of oil and grease per kkg (respectively 6 lb, 10 lb, 4 lb and 0.9 lb/1000 lb) of anhydrous soap. The pH is generally about 5.0, but a range of 5.0 to greater than 13.0 has been noted. Loads several times as great as the aforegoing have been recorded for some operations, resulting primarily from variances in handling the nigre.

(2) Subpart B—Fatty Acid Manufacturing by Fat Splitting Subcategory. Water use in fat splitting is quite variable, ranging from 1750 to 240,000 l/kkg (200 to 27,000 gal/1000 lb) of fatty acids produced. This variation is primarily the result of the degree of water recycle, the lower figure representing blowdown from a recycle system for process condensate and barometric condenser water employing a cooling tower and the upper figure representing once through water use.

The waste waters will contain salts from neutralization (waste waters usually are acidulated to break emulsions for improved skimming and then neutralized), zinc and alkaline earth metal salts from the fat splitting catalyst, and emulsified fats, fatty acids and fatty acid polymers. Typical raw waste loads for the best operations are 12 kg of BOD5, 22 kg of COD, 11 kg of total suspended nonfilterable solids, and 2.50 kg of oil and grease per kkg (respectively 12 lb, 22 lb, 11 lb and 2.5 lb/1000 lb) of anhydrous fatty acid produced. Loads of 4–5 times these amounts have been encountered in some fat splitting operations, with the load level bearing a general correlation to the volume of water used. When flash hydrogenation of the fatty acids is employed (a common practice in many fatty acid operations) an additional raw waste load of 1.5 kg of BOD5, 2.5 of COD, 1.0 kg of total suspended non-filterable solids, and 1.0 of oil and grease (respectively 1.5 lb, 2.5 lb, 1.0 lb and 1.0 lb/1000 lb) is generated per kkg of anhydrous fatty acid.

(3) Subpart C—Soap Manufacturing by Fatty Acid Neutralization Subcategory. Except for a smal lamount of water (250 1/kkg; 31 gal/1000 lb of soap) used for reclaiming scrap and resulting in sewer lyes, the subcategory has no aqueous effluent. Moreover, recovery is more nearly a by-product operation than a line operation. Potable water used in the brine (for proper electrolyte balance) is included in the neat soap that is the product.

In the best operations the recovery of scrap soap produces raw waste loads of 3 kg of BOD5 and 5.5 kg of COD per kkg (respectively 3 lb and 5.5 lb/1000 lb) of anhydrous soap. Translated into terms related to total production for an operation in this subcategory, and based on the excepted portion of production represented by scrap soap recovery, the loads become 0.10 kg of BOD5, 0.25 kg of COD, 0.20 kg of total suspended nonfilterable solids, and 0.05 kg of oil and grease per kkg (respectively 0.1 lb, 0.25 lb, 0.2 lb and 0.05 lb/1000 lb) of anhydrous soap.

(4) Subpart D—Glycerine Concentration Subcategory. When compared to the discharge resulting from use of barometric condensers, the other waste waters (stream condensate, washout, etc.) are negligible volumes. Installations not recirculating barometric condenser waters discharge 465,000–1,027,000 l/kkg (56,000–124,000 gal/1000 lb) of glycerine. When ion exchange (for salt removal) precedes concentration, and additional discharge of about 450 l/kkg (55 gal/1000 lb) of glycerine will result from backwashing and regeneration.

Contaminants in the discharge, consisting primarily of entrained glycerine, fats, fatty acids and salt, constitute one of the heavier loads encountered in the soap and detergent manufacturing category. For the best operations the raw waste load will approximate 15 kg of BOD5, 30 kg of COD, 2 kg of total suspended nonfilterable solids, and 1 kg of oil and grease per kkg (respectively 15 lb, 30 lb, and 1 lb/1000 lb) of anhydrous glycerine.

(5) Subpart E—Glycerine Distillation Subcategory. As is the case in glycerine concentration, the major volume of waste discharge results from use of barometric condensers. A small volume of waste water, but one with extremely high concentrations of pollutants, results from washout of the glycerine foots (still bottoms). For installations not recirculating condenser waters through cooling towers the volume of discharge is 233,000–513,000 l/kkg (28,000–62,000 gal/1000 lb) of anhydrous glycerine. With recirculation through a cooling tower the blowdown approximates 3325 l/kkg (400 gal/1000 lb) of anhydrous glycerine.

The waste discharge will contain contaminants in the form of organics (primarily glycerine and glycerine polymers) and salts. For the best operations in this subcategory the raw waste load averages 5 kg of BOD5, 10 kg of COD, 2 kg of total suspended non-filterable solids, and 1 kg of oil and grease per kkg (respectively 5 lb, 10 lb, 2 lb and 1 lb/1000 lb) of anhydrous glycerine. Condenser entrainment and glycerine foots contribute approximately equal amounts to the BOD5 and COD, but other pollutants are primarily attributable to the glycerine foots.

(6) Subpart F—Manufacture of Soap Flakes and Powders Subcategory. The amounts of waste water discharged are quite small, being limited to those associated with a very occasional wet cleanup of equipment. There are additional aqueous wastes associated with recovery of scrap soap, but since all plants producing soap flakes and powders also produce neat soaps (utilizing either kettle boil or fatty acid neutralization) and the recovered soaps are incorporated into this intermediate product, these wastes have not been assigned to the soap flake and powders manufacture subcategory.

For the best operations the typical raw waste loads are 0.10 kg of BOD5, 0.30 kg of COD, 0.10 kg of total suspended non-filterable solids, and 0.10 kg of oil and grease per kkg (respectively 0.1 lb, 0.3 lb, 0.1 lb and 0.1 lb/1000 lb) of anhydrous product.

(7) Subpart G—Manufacture of Bar Soaps Subcategory: The volume of waste water discharged in the manufacture of bar soap is quite variable, ranging from near zero to about 6700 l/kkg (800 gal/1000 lb) of anhydrous soap. Water from drying neat soap may be vented to the atmosphere or a barometric condenser may be employed, serving both as a source of pressure reduction to attain faster drying at lower temperatures and as a final scrubber for atmospheric emissions. In the former case there is no aqueous waste, while in the latter the discharge ranges up to 6230 l/kkg (750 gal/1000 lb) of anhydrous soap. Similarly, cleaning of equipment may be accomplished, dry or small amounts of water may be used.

Contaminants found in the waste waters are soap and various additives (pigments, emollients, perfumes, etc.) incorporated into finished bar soaps. Average raw waste loads for the best operations in this subcategory are 3.4 kg of BOD5, 5.7 kg of COD, 5.8 kg of total suspended non-filterable solids, and 0.4 kg of oil and grease per kkg (respectively 3.4 lb, 5.7 lb, 5.8 lb and 0.4 lb/1000 lb) of anhydrous product.

(8) Subpart H—Manufacture of Liquid Soaps Subcategory. Production of liquid soap, consisting of a simple blending operation followed by filling of rather large containers such as drums, has very little associated aqueous effluent. The water use of 16.6 l/kkg (2 gal/1000 lb) of anhydrous soap for equipment washout and the slightly larger amount used for cleaning filters will contribute a raw waste load of about 0.1 kg of BOD5, 0.3 kg of COD, 0.1 kg of total suspended nonfilterable solids, and 0.1 kg of oil and grease per kkg (respectively 0.1 lb, 0.3

ib, 0.1 lb and 0.1 lb/1000 lb) of anhydrous product.

(9) Subpart I—Oleum Sulfonation and Sulfation Subcategory. Waste water discharges associated with oleum sulfonation and sulfation are very limited in volume, the 100–2700 l/kkg (12–300 gal/1000 lb) of anhydrous products that results from playing water over pump packing glands for removal of small leaks and cooling being the only regular discharge. Scrubbing of emissions from the SO3 vent during filling of the oleum storage tank, cleanup of spills and leaks, and washout of equipment prior to performance of maintenance will result in short periods of a much higher discharge rate. Further reduction of water use is not feasible because of the highly acidic nature of the oleum raw material and the sulfuric acid esters and sulfonic acids products.

Contaminants found in the raw waste discharge may represent the full range of feed materials and products. Typical raw waste loads for a well managed operation are 0.2 kg of BOD5, 0.6 kg of COD, 0.3 kg of total suspended nonfilterable solids, 0.07 kg of surfactants, and 0.3 kg of oil and grease per kkg (respectively 0.2 lb, 0.6 lb, 0.3 lb, 0.7 lb and 0.3 lb/1000 lb) of anhydrous product.

(10) Subpart J—Air–SO3 Sulfation and Sulfonation Subcategory. Though there are no continuous discharges associated with this operation, the volume of discharge is several times that associated with oleum sulfonation and sulfation. In addition, water use with batch operations is considerably greater than for continuous operations.

Contaminants found in the raw waste discharges may represent the full range of raw materials and products associated with the process, but the principal ones will be under sulfated materials produced at startup and charred materials that are the result of the extremely vigorous nature of the reaction. Raw waste loads associated with the best operations in this subcategory are 3 kg of BOD5, 9 kg of COD, 0.3 kg of total suspended nonfilterable solids, 3 kg of surfactant, and 0.5 kg of oil and grease per kkg (respectively 3 lb, 9 lb, 0.3 lb, 3 lb and 0.5 lb/100/b) of anhydrous product. Small batch operations may experience somewhat higher waste loads.

(11) Subpart K—SO3 Solvent and Vacuum Sulfonation Subcategory. The volume of discharge generally closely approximates that for air-SO3 sulfation, as do the contaminants. If barometric condensers are employed for pressure reduction, the volume of discharge will be greatly increased. Typical raw waste loads are 3 kg of BOD5, 9 kg of COD, 0.3 kg of total suspended nonfilterable solids, 3 kg of surfactants, and 0.5 kg of oil and grease per kkg (respectively 3 lb, 9 lb, 0.3, 3 and 0.5 lb/100 lb) of anhydrous product.

(12) Subpart L—Sulfamic Acid Sulfation Subcategory. The volume, contaminants and loads of the raw waste parallel those of SO3 solvent and vacuum sulfonation above.

(13) Subpart M—Chlorosulfonic Acid Sulfation Subcategory. Discharges are of modest volumes and intermittent. The contaminants expected in waste waters are the feedstocks (alcohols, alkylphenols and alcohol ethoxylates), chlorosulfonic acid hydrolysis products (HCl and H2SO4) and the sulfated surfactants. Typical raw waste loads are 3 kg of BOD5, 9 kg of COD, 0.3 kg of total suspended nonfilterable solids, 3 kg of surfactants, and 0.5 kg of oil and grease per kkg (respectively 3 lb, 9 lb, 0.3 lb, 3 lb and 0.5 lb/1000 lb) of anhydrous product.

(14) Subpart N—Neutralization of Sulfuric Acid Esters and Sulfonic Acids Subcategory. The volume of discharges is quite variable and largely dependent on the degree to which recycle of cooling waters is practiced. A range of 10.4–4170 l/kkg of anhydrous product (1.25–500 gal/1000 lb) has been noted. Similarly, a wide range of contaminants concentration and load has been recorded, the ratio of highs to lows approximating 10 to 1. In general, low loads are associated with small volumes and high concentrations and high loads associated with large volumes and low concentrations. Raw waste loads for the best operations are 0.1 kg of BOD5, 0.3 kg of COD, 0.3 kg of total suspended nonfilterable solids, 0.2 kg of surfactants, and 0.1 kg of oil and grease per kkg (respectively 0.1 lb, 0.3 lb, 0.3 lb, 0.2 lb and 0.1 lb/1000 lb) of anhydrous product.

(15) Subpart O—Manufacturing of Spray Dried Detergents Subcategory. Three sets of operating conditions must be considered in discussion of waste characteristics and other factors associated with manufacture of spray dried detergents: (1) Processing of low or nonionic surfactant content formulations (hence few atmospheric emission control problems and with little or no requirement for wet scrubbing) with relatively long runs and few turnarounds; designated as normal operation. (2) Processing of high nonionic surfactant content formulations with the consequent severe atmospheric emission control problems that require extensive wet scrubbing; designated as air quality restricted operations. (3) Processing of numerous widely varying formulations (high-phosphate, nonphosphate, etc.) in short runs with associated need for frequent washouts to avoid cross-contamination of products; designated as fast turnaround operation.

There is such a wide range of variation in the volumes of discharge within a single type of operation and between the types of operations that it is not possible to relate volumes of discharge to units of production. Normal operations may approach zero discharge. Volumes of discharge for air restricted operations will be determined by the amount of scrubbing required, a factor controlled by the specific formulation. For fast turnaround operations the volume of discharge will be determined by the length of runs and characteristics of the formulation (e.g., tackiness and tendency to char).

Constituents that may be found in the waste discharges are any of the surfactants and builders employed in the formulations. Typical raw waste loads for the best normal operations are 0.1 kg of BOD5, 0.3 kg of COD, 0.1 kg of total suspended non-filterable solids, 0.2 kg of surfactants, and 0.0 kg of oil and grease per kkg (respectively 0.1 lb, 0.3 lb, 0.1 lb, 0.2 lb, and 0.0 lb/1000 lb) of anhydrous product. For air quality restricted operations the comparable values are 0.8 kg of BOD5, 0.3 kg of COD, 0.1 kg of total suspended non-filterable solids, 1.5 kg of surfactants, and 0.3 kg of oil and grease per kkg (respectively 0.8 lb, 2.5 lb. 1/0 lb, 1.5 lb, and 0.3 lb/1000 lb) of anhydrous product. For each turnaround in excess of six in a thirty-day period an added raw waste load of 0.2 kg of BOD5, 0.6 kg of COD, 0.2 kg of total suspended nonfilterable solids, 0.4 kg of surfactants, and 0.03 kg of oil and grease, per kkg (respectively 0.2 lb, 0.6 lb, 0.2 lb, 0.4 lb, and 0.03 lb/1000 lb) of anhydrous product is expected in well managed fast turnaround operations.

(16) Subpart P—Manufacture of Liquid Detergents Subcategory. Waste discharge volumes range from 625–6250 l/kkg (75–750 gal/1000 lb) of anhydrous detergent. Any of the starting ingredients of the specific detergents being processed may be found in the raw discharge. Raw waste loads for the best operations are 2 kg of BOD5, 4 kg of COD, 1.3 kg of surfactant, 0.0 kg of total suspended nonfilterable solids, 0.0 kg of oil and grease per kkg (respectively 2 lb, 4 lb, 1.3 lb, and 0.0 lb/1000 lb) of anhydrous product.

(17) Subpart Q—Manufacture of Detergents by Dry Blending Subcategory. The small, but variable, amounts of waste water that may be generated by cleanup of spills and washout of equipment cannot be related to units of product. Constituents in the discharge may represent any of the surfactants or builders employed. Raw waste loads should not exceed 0.1 kg of BOD5, 0.5 kg of COD, 0.1 kg of total suspended non-filterable solids, 0.1 kg of surfactants, and 0.0 kg of oil and grease per kkg (respectively 0.1 lb, 0.5 lb, 0.1 lb, 0.1 lb, and 0.0 lb/1000 lb) of anhydrous detergent.

(18) Subpart R—Manufacture of Drum Dried Detergents Subcategory. Very limited discharges will be generated during mandatory washdown attributable to equipment failure or critical formulation changes. The average raw waste loads which can be expected for the best operations are 0.1 kg of BOD5, 0.3 kg of COD, 0.1 kg of total suspended non-filterable solids, 0.1 kg of surfactants, and 0.1 kg of oil and grease per kkg (respectively 0.1 lb, 0.3 lb, 0.1 lb, 0.1 lb, and 0.1 lb/1000 lb) of anhydrous product.

(19) Subpart S—Manufacture of Detergent Bars and Cakes Subcategory. Volumes of waste water in this subcategory generally exceed those for manufacture of bar soaps (Subpart A) by about 50 percent. This is attributable to the necessity for equipment washdown to avoid contamination by degradation of surfactants adhering to heated surfaces.

Contaminants include surfactants, additives (pigments, perfumes, emollients, etc.) and soap (a major component of most "detergent" bars). For a well operated installation the raw waste loads should not exceed 7 kg of BOD5, 22 kg of COD, 2 kg of total suspended non-filterable solids, 5 kg of surfactants, and 0.2 kg of oil and grease per kkg (respectively 7 lb, 22 lb, 2 lb, 5 lb, and 0.2 lb/1000 lb) of anhydrous product.

(iii) Origin of waste water pollutants in the soap and detergent manufacturing category. (1) Soap manufacturing by batch kettle subcategory: Spills and leaks. These are variable volume sources of a sporadic nature. Potential pollutants include fats and oils, soap, salt, and alkalies.

Fat and oil pretreatment. Various amounts of water from acid or caustic washes, steam condensate from heating of fats and oils, and in some operations barometric condenser waters. Potential pollutants include fats and oils, clay or proprietary pretreatment chemicals, and low molecular weight fatty acids.

Nigre from kettle boil. Varying small volumes of water containing soaps, impurities such as color bodies, salt, caustic and some unreacted fats and oils.

Sewer lyes from reclaiming of scrap soap. Varying small amounts of water containing soap, salt, caustic and detritus such as paper and dirt.

(2) Manufacturing of fatty acids by fat splitting subcategory. Spills and leaks. Variable volume sources of a sporadic nature, potentially containing fats and oils, fatty acids and glycerine.

Barometric condensers. The volume is small if recycle with blowdown is practiced and large if once-through water use is practiced. Expected pollutants are fats and oils, fatty acids (especially short chain acids) and glycerine.

Still bottoms. Small volume, but highly concentrated wastes that will contain fats and oils, fatty acids, glycerine and zinc and alkaline earth metal salts from catalysts.

(3) Manufacturing of soap by fatty acid neutralization subcategory. Spills and leaks. Variable small volumes of a sporadic nature. Potential pollutants are caustics, fatty acids and soaps. Sewer lyes from reclaiming of scrap soap: as in subpart A.

(4) Glycerine concentration Subcategory. Barometric condensers. Volumes are highly variable and dependent on the degree of recycle and blowdown. Expected pollutants are glycerine and salt.

Leaks and spills—Variable in volume and sporadic. Pollutants are glycerine and salt.

(5) Glycerine distillation subcategory. Leaks and spills. Variable in volume and sporadic. Pollutants are glycerine and salt.

Barometric condensers. Volumes are highly variable and dependent on the degree of recycle and blowdown. Expected pollutants are entrained glycerine and salt.

Glycerine foots (still bottoms). Small volumes of highly concentrated wastes containing glycerine, glycerine polymers and salt.

(6) Manufacture of soap flakes and powders subcategory. Leaks and spills. Variable in volume and sporadic. Pollutants are soap, builders and other additives.

Equipment cleaning. The volumes expected would be relatively small and of infrequent occurrence, as most cleanup would be dry.

(7) Manufacture of bar soaps subcategory: Barometric condensers. This source would exist only if vacuum driers are employed and generally would be less than 6.3 l/sec (100 gpm). Pollutants would be entrained soap dust containing soap and additives.

Scrubbers. Scrubbers may be employed to control dust from various operations in this subcategory. In terms of volumes of water employed for scrubbing in other subcategories, the quantity in this subcategory is small. When barometric condensers are present, the condenser water may be used for scrubbing. Pollutants would be soap and additives.

Equipment cleanup. Volumes would be small and occurrence infrequent (most cleanup is dry). Pollutants are soaps and additives.

(8) Manufacture of liquid soaps subcategory: Leaks and spills. Sporadic and of limited quantity.

Equipment cleanup. Rather infrequent and of relatively small quantities. Pollutants are soap, builders and other additives.

(9) Oleum sulfonation and sulfation subcategory: Leaks and spills. Sporadic in nature. Volumes of waste water will be very large in relation to the amount of material spilled because of dilution required to control hazards attributable to the high acidity of the oleum and the sulfonated and sulfated materials. Pollutants could be oleum, feedstocks and sulfonated or sulfated products.

Pump packing gland waters. The volume generally would be 0.3 l/sec (5 gpm) or less and the potential pollutants would be oleum, feedstocks and sulfonated or sulfated products.

Oleum tank vent scrubber. Atmospheric emissions from the vent are scrubbed during filling of the oleum tank to remove SO_3 vapors. The pollutant will be dilute sulfuric acid.

(10) Air-SO_3 sulfation and sulfonation subcategory: Leaks and spills. Sporadic and variable large volumes due to dilution required by the highly acidic materials.

By-product disposal. In continuous processes the charred materials collect in pots and the pots are periodically flushed. Water use is approximately 250 l/kkg (30 gal/1000 lb) of product. Pollutants will consist of sulfonated and sulfated materials.

Equipment cleanup. Washing of equipment will contribute varying amounts of water. For continuous processes this will occur infrequently. For batch process it will occur after each batch. In many installations this will also include washing of filters that are installed for removal of impurities in various process streams. Pollutants expected are feedstocks and sulfated or sulfonated products.

(11) SO_3 solvent and vacuum sulfonation subcategory: Leaks and spills. Variable and sporadic. Pollutants are feedstocks and sulfonated products.

Equipment cleaning. This is the principal source of discharge and may follow each batch. Pollutants are unreacted feedstocks and sulfonated products.

Barometric condensers. If barometric condensers are employed there will be a large volume of dilute waste containing entrained feedstocks and sulfonated materials.

(12) Sulfamic acid sulfation subcategory. As in (11) subpart K above, but higher levels of water use and pollutants due to the highly viscous product and high surface to volume ratio of the reactor. Barometric condensers will not be employed.

(13) Chlorosulfonic acid sulfation subcategory: Leaks and spills. Variable quantities of sporadic occurrence containing feedstocks and products.

Equipment cleaning. Washouts will occur occasionally, not after each batch. Pollutants are unreacted feedstocks and sulfated products.

By-product hydrochloric acid hydrolysis of the chlorosulfonic acid produces hydrochloric acid which may be absorbed in water or an alkaline solution and then sewered.

(14) Neutralization of sulfuric acid esters and sulfonic acids subcategory. Leaks and Spills. Variable sporadic quantities containing the sulfonated and sulfated feedstocks and the neutralized surfactants.

Equipment cleaning. Infrequent and generally associated with maintenance of equipment. Pollutants expected are feedstocks and products.

(15) Manufacture of spray dried detergents subcategory. Leaks and spills: Variable and sporadic. Pollutants expected are surfactants, builders and other additives. Scrubbers: Refer to (ii), (15), Subpart O. Equipment cleaning: Refer to (ii), (15), Subpart O.

(16) Manufacture of liquid detergents subcategory. Leaks and spills. Variable and sporadic. Potential pollutants represent the full range of surfactants and additives.

Equipment cleaning. This is the main source of waste water and pollutants associated with the subcategory. The full range of surfactants and additives is to be expected in the discharge.

(17) Manufacture of detergents by dry blending subcategory. Leaks and spills. Little or no water will be utilized for cleanup of spills. Potential pollutants represent the full range of materials employed.

Equipment cleaning. Wet cleaning of equipment is an infrequent occurrence and will involve minor amounts of water. Potential pollutants encompass the full range of materials employed.

(18) Manufacture of drum dried detergents subcategory. Leaks and spills.

Variable and sporadic. Full range of materials employed may appear in resulting waste.

Equipment cleaning. Wet cleaning of equipment is infrequent and should involve only minor quantities of water.

Scrubbers. Scrubbers may be present in some installations to control atmospheric emissions. The waste discharges will be similar to those encountered in spray towers, but lower in contaminant concentration and much lower in volume.

(19) Manufacture of detergent bars and cakes subcategory. In general this subcategory parallels manufacture of bar soaps (refer to (iii), (7) Subpart G). The most significant difference is the requirement for more frequent and complete washouts because of the heat sensitive nature of the detergents' active ingredients.

(iv) Treatment and Control Technology. In-plant pollution controls fall into two broad areas, housekeeping and modification of processes and equipment. There is sufficient difference in appropriate in-plant control among the subcategories to warrant separate discussions by subcategory rather than a single generalized discussion. Such coverage is provided under heading (v). Those procedures which most appropriately may be considered pretreatment of raw waste streams are covered under that same heading.

As a result of the very limited number of point sources existing in the soap and detergent manufacturing category, very little information is available on "end-of-pipe" treatment. However, the information available from the industry's experience and laboratory or bench scale studies indicated that the wastes are amenable to satisfactory reduction in properly designed and operated biological treatment systems. Treatment systems presently operated by point sources in the industry are of three types, i.e., oxidation lagoons, aerated lagoons, and systems involving modified activated sludge (extended aeration).

Identification of plants utilizing oxidation lagoons and receipt of very limited data on their operational parameters occurred extremely late in the period of effluent guidelines development. Hence, it was not possible to fully evaluate this treatment option.

Based on the limited information available, it appears that one plant whose operations include several subcategories in the detergent area is meeting the recommended effluent limitations with an oxidation lagoon having about a six-month retention period. Specialized fatty acids producers apparently are not meeting the limitations with oxidation lagoons, but it seems to be a combined function of excessive raw waste loads and low treatment efficiency. It must be noted that their operations include specialized processes (e.g., amination and ethoxylation of fatty acids) that are not included in the guidelines for the soap and detergent manufacturing category. An aerated lagoon (of approximately 45-day retention and preceded by equalization) utilized by a liquid detergent plant is attaining reductions of approximately 94 percent for BOD5, 85 percent for COD, and 73 percent for total dissolved solids, but no reduction in total suspended non-filterable solids. Since only 3–4.5 kw (4–6 hp) rather than the typical 25–30 kw (30–40 hp) of aeration per million gallons of capacity is supplied, the present mode of operation of this treatment facility is intermediate to those of an oxidation lagoon and a completely mixed aerated lagoon. Engineering evaluation indicated that reductions on the order of 98 percent for BOD5, 90 percent for COD, and 90 percent for total suspended non-filterable solids are attainable if 25–30 kw (30–40 hp) of aeration per million gallons of capacity are supplied, a final clarification stage is installed, and much of the sludge from clarification is returned to the lagoon.

For a number of years a treatment system consisting of an equalization basin, an extended aeration unit, and a final clarifier has been operated by a major integrated soap and detergent plant. This treatment system generally has realized BOD5 reductions approaching 90 percent, COD reductions of 85 percent and total suspended non-filterable solids reduction of 84 percent, but it has been subject to occasional major upsets. At present, the system is being revamped to include a much larger equalization basin and a lime addition flocculation and precipitation unit, both preceding the existing equalization basin. Under the new mode of operation the treatment system is expected to attain reduction of 94 percent and 92 percent for BOD5, COD, and total suspended non-filterable solids respectively, and there should be drastic reduction in upset frequency and severity.

In view of the aforegoing, it is the decision of EPA that any end-of-pipe treatment consistent with the best practicable control technology currently available in the soap and detergent manufacturing category of point sources is the equivalent of a biological treatment attaining reductions of 90 percent for BOD5, total suspended non-filterable solids, oil and grease, and surfactants and a reduction of 85 percent for COD.

Additional treatment must be considered in evaluating the degree of effluent reduction attainable through the application of the best available technology economically achievable and the standards of performance for new sources. Since there are no treatment techniques known to be applied in the soap and detergent manufacturing industry other than those previously described, transfer of technology from other industrial categories or research must be considered. Among the treatment procedures that appear to merit consideration are various lion 1/day (1,000,000 gal) down to 0.38 lagoons and sand, mixed media or carbon filters), two stage activated sludge, and chemical-physical techniques.

With the exception of chemical-physical treatment, a virtually unknown quantity, it reasonably can be assumed that the procedures would attain effluent discharges 50–75 percent lower than those presently attained. Cost and availability of land, capital and operating costs of treatment, and characteristics of the specific wastes will influence the selection of the most appropriate treatment procedure. For a volume range of 3.8 million 1/day(1,000,000 gal) down to 0.38 million 1/day (100,000 gal), the capital costs range from $50–300/3800 1 (1000 gal)/day and the direct operating costs range from $0.03–0.50/3800 1 (1000 gal)/day, with the costs for carbon filtration being about double those of the other approaches.

The disposal of solid wastes (consisting of wastes handled "dry" within the plant and sludge generated by end of process treatment) does not constitute a serious problem. The wastes are readily subject to degradation in land disposal sites and are, in fact, less hazardous to the environment than many materials commonly placed in municipal sanitary landfills.

The need for atmospheric emission control is limited to processes associated with drying of soaps and detergents, especially spray drying of detergents. With the exception of the spray drying of some detergent formulations requiring use of such large quantities of scrubber water that it cannot all be recycled to process, atmospheric emissions can be controlled by dry methods (cyclones, bag houses and electrostatic precipitators) or use of limited wet scrubbing with scrubber water recycled to process. For the exception cases it is the position of EPA that it is preferable to have pollutants in aqueous wastes which will receive subsequent treatment rather than in atmospheric emissions. This is reflected in the proposed guidelines for manufacture of spray dried detergents (Subpart 0).

(v) Treatment and control technology within subcategories. End-of-pipe treatment does not vary significantly for the subcategories and thus will not be discussed by subcategory. Similarly, good housekeeping practices (e.g., maintenance, "dry" cleanup of all but very hazardous spills with recycle to process or disposal as solid waste) are essentially consistent and will not be discussed by subcategory.

(1) Treatment in soap manufacturing by batch kettle subcategory. The principal waste loads associated with batch kettle production of neat soap are those resulting from discharge of nigre. Controls which should be considered include: (a) Recovery of nigre as a by-product to be processed into pet soaps, industrial lubricants, or other low-grade products; (b) Recycle to extinction through use of a counter current mode of operation; and (c) Acidulation of the nigre to release soaps, fats and oils followed by skimming for recovery of these materials.

(2) Treatment in the fatty acid manufacturing by fat splitting subcategory. The principal waste loads associated with this subcategory result from entainment in barometric condenser waters and discharge of still bottoms.

Waste control measures which merit consideration include: (a) Improvement of skimming through utilization of flocculants for flotation or precipitation; (b) Installation of improved demisters, fractionation trays, or other devices to reduce entrainment; (c) Recycle of reactor condensate back into process; (d) Recycle of barometric condenser water by utilization of cooling towers and blowdown to minimize hydraulic loading for improved skimming and end-of-pipe treatment; (e) Operation of cooling towers as biological towers; and (f) Replacement of barometric condensers with surface condensers and vacuum pumps.

(3) Treatment in the soap manufacturing by fatty acid neutralization subcategory. The raw waste discharge for this subcategory appears to be at or near the achievable minimum, the only aqueous waste being the small amount of sewer lyes resulting from reclaiming of scrap soap. Any minor in-plant decreases in pollutant discharge could only result from improved housekeeping or improved pretreatment (e.g., use of flocculants in skimming).

(4) Treatment in the glycerine concentration subcategory. In terms of waste load per unit of anhydrous product the raw effluent loads arising from entrainment in barometric condenser water in this process represent the highest encountered within the industry. Because of the infinite solubility of glycerine in water typical pretreatment is ineffective; thus, the only approaches for reduction of pollutant discharge are process and equipment modifications and end-of-pipe treatment. Process and equipment modifications meriting consideration include: (a) Installation of improved demisters, fractionation trays, or other devices to reduce entrainment; (b) Recycle of barometric condenser water by utilization of cooling towers and blowdown to minimize hydraulic loading for improved end-of-pipe treatment; (c) Operation of cooling towers as biological towers to reduce the organic load in blowdown; and (d) Replacement of barometric condensers with surface condensers and vacuum pumps.

(5) Treatment in the glycerine distillation subcategory. Pollutants discharged from the glycerine distillation process represent one of the higher raw waste loadings in terms of waste load per unit of anhydrous product. Two sources, entrainment in barometric condenser water and discharge of glycerine foots, contribute about equal amounts. Appropriate entrainment controls are the same as those for the glycerine concentration subcategory. Glycerine foots are a highly viscous semi-solid at normal temperature. Common industry practices are to discharge the hot foots into a tank containing sufficient water for solution prior to discharge to the sewer, or to remove the foots in washdown of the still. Alternatives for handling glycerine foots include: (a) Recovery as a byproduct for potential further processing; (b) Collection and disposal as a solid waste; and (c) Incineration in special-design boilers for recovery of heat value.

(6) Treatment in the manufacture of soap flakes and powders subcategory. This subcategory is a very minor source of aqueous discharge. Recycle of water and return of water to process should result in an essentially dry process.

(7) Treatment in the manufacture of bar soap subcategory: Volumes of discharge from this subcategory are small but some effluents carry relatively heavy pollutant loads. Other than pollutants arising from spills, leaks and washout of equipment, all of which can be minimized by utilizing dry cleanup to the greatest degree possible, the major sources of pollution are associated with drying of the neat soap and reclaiming of scrap soap. Appropriate controls in reclaiming scrap soap are as discussed in (1) Subpart A and (3) Subpart C. Controls meriting consideration for control of contaminants from drying include: (a) Replacement of wet scrubbers on atmospheric emissions with cyclones, bag houses, electrostatic precipitators or other dry control measures; (b) Replacement of barometric condensers on vacuum driers with surface condensers and vacuum pumps; (c) Installation of atmospheric driers ahead of vacuum driers; (d) Recycle of barometric condenser water utilizing cooling towers and blowdown; and (e) Improved skimming utilizing acidification, flocculation, or flotation.

(8) Treatment in the manufacture of liquid soaps subcategory. This subcategory is a very minor source of waste effluents. The equipment employed is simple and does not offer much potential for reduction of waste discharge through modification. Housekeeping (spill control, etc.) and production scheduling to minimize need for washouts are the principal means of reducing effluents.

(9) Subpart I—Treatment in oleum sulfonation and sulfation subcategory. This subcategory is essentially optimized at the present, and reduction of effluents is largely a matter of housekeeping.

(10) Treatment in the Air-SO3 sulfonation and sulfation subcategory. In terms of loads per unit of product the waste discharges from this subcategory are among the highest encountered in the industry. In-plant controls which should be considered include: (a) recycle of under sulfonated material produced at startup; (b) recycle of scrubber water; (c) installation of improved controls for mixing, temperature, etc.; and (d) in case of expansion or replacement, the installation of new processes.

(11) Treatment in the solvent and vacuum sulfonation subcategory. This process is usually a small batch operation that will have waste loadings similiar to those of the air-SO3 sulfonation subcategory. Potential waste reduction controls include: (a) recycle of scrubber and barometric condenser waters, utilizing cooling towers and blowdown; (b) operation of cooling towers as biological towers; and (c) replacement of barometric condensers with surface condensers and vacuum pumps.

(12) Treatment in the sulfamic acid sulfation subcategory. This is a batch operation performed in simple equipment with leaks, spills and washout being the source of waste effluents. Potential control measures include: (a) reuse of wash water, either as wash water or as a feed for other sulfonation and sulfation processes; and (b) replacement of water with other solvents for washout.

(13) Treatment in the chlorosulfonic acid sulfation subcategory. This is a batch operation performed in simple equipment with leaks, spills and washout being the source of waste effluents. Potential control measures include: (a) reuse of wash water, either as wash water or as feed for other sulfonation and sulfation processes; and (b) replacement of water with other solvents for washout.

(14) Treatment in the neutralization of sulfuric acid esters and sulfonic acids subcategory. This process is at or near optimum operation with continuous process installations highly automated. Waste control to further reduce the existing low waste levels is solely a matter of improved housekeeping.

(15) Treatment in the spray dried detergents subcategory. Because of the large volumes involved, spray drying towers are one of the principal sources of waste effluent in the industry. As noted in the previous discussions of waste sources and characteristics, there is considerable variation in operation of spray towers. Similarly, there is variation in appropriate in-plant control.

Through utilization of dry controls for atmospheric emissions (cyclones, bag houses and electrostatic precipitators) and maximum recycle into process of equipment wash water, it is possible for normal spray tower operation to be essentially a closed system. Such is not the case for air quality restricted and fast turnaround operations where wet scrubbing of atmospheric emissions and frequent washouts generate extremely large volumes of waste water. There are, however, modifications that can reduce effluents for from one to all three modes of operation. These include: (a) Scheduling of production so as to minimize the number of turnarounds requiring washout. (b) installation of holding tanks to permit recycle of washouts for at least the most commonly processed formulations; and (c) installation of a two stage scrubber in stacks of spray towers processing formulations causing atmospheric emission problems, the first stage to utilize cooled water and both stages to employ recirculation. To the maximum extent possible, blowdown from the second stage should be used for make-up in the first stage, and blowdown from the first stage should be used in crutchers.

(16) Treatment in the manufacture of liquid detergents subcategory. Filling lines are the principal source of waste discharges from this operation, with much of the waste resulting from purging and cleaning associated with the changeover of product. Approaches for minimizing wastes include: (a) scheduling of production to minimize the number of product changeovers; (b) installation

of provisions for air blowing of lines for changeover; and (c) installation of facilities for capture, storage and recycle of spills and washouts to product make-up.

(17) Treatment in the detergent manufacturing by dry blending subcategory. Reduction of waste discharge of this essentially dry operation is strictly a matter of improved housekeeping, including elimination of spills and dry cleanup of spills and equipment.

(18) Treatment in the manufacture of drum dried detergents subcategory. Again, this is an essentially "dry" operation. If scrubbers are utilized on atmospheric emissions, the resulting water should be recycled using cooling towers. In view of the limited amount of contaminant expected, operation of such cooling towers as biological towers could result in near zero discharge of pollutants.

(19) Treatment in the detergent bars and cakes subcategory. In general, as in (7) Subpart G—manufacture of bar soaps subcategory. Consideration might be given to recycle of equipment washout to the crutchers of a spray tower in larger integrated plants.

(vi) Cost estimates for control of waste water pollutants in the soap and detergent manufacturing category. The cost and energy requirements associated with control and treatment technologies, including those for the fat splitting, fatty acid refining and hydrogenation, operations of fatty acid specialty producers, have been considered. The capital investment required for compliance with the 1977 limitation (at least 80 percent of which is attributable to the needs of fatty acid specialty producers) has been estimated at $350,000 for all point sources. Additional capital investment of about $750,000 is required for compliance with 1983 limitations. Of this additional capital investment, approximately 25–30 percent represents the share of fatty acid specialty producers and the remainder is assignable to the basic soap and detergent manufacturing industry. The relatively low capital investment requirements for compliance reflect the influence of two factors: First, the very limited number of point sources; and secondly, the fact that most of the treatment and control facilities required to meet the limitations are in place at present.

Relatively minor modifications in end-of-pipe treatment account for the bulk of the capital investment required to meet the 1977 limitations in the case of the basic soap and detergent manufacturing industry. For the fatty acid specialty producers about 25 percent of the expenditure is for modification of end-of-pipe treatment and the remainder is for in-plant control, primarily for recycle of barometric condenser waters and improved oil and grease skimming. The split in additional capital investment for compliance with 1983 limitations is approximately 75 percent for the basic soap and detergent manufacturing industry and 25 percent for fatty acid specialty producers. For both groups the costs representing in-plant control and end-of-pipe treatment are approximately equal.

Added energy requirements for compliance with either 1977 or 1983 effluent limitations are less than 5 percent of the total energy consumption for point sources and only a small fraction of 1 percent of the consumption for the entire industry. Consumption of energy by point sources for end-of-pipe treatment approximates 3,000 kwh/day and in-plant controls are estimated to consume an additional 15–30 kwh/day; most of the facilities which account for these energy consumptions are in place at present.

The aforegoing estimates are based on the existing situation in the soap and detergent manufacturing industry. If increasingly stringent pretreatment requirements and user charges associated with discharge to municipal systems should result in opting for industry treatment of its wastes, an alternative probably beyond the financial capibilities of many smaller companies, minimum investment to meet the 1977 limitations would exceed $50 million and additional investment to meet 1983 limitations would exceed $20 million. Similarly, an at least one hundred fold increase in direct energy requirements would occur.

(vii) Establishing daily maximum limitations. In setting daily maximum limitations the reliability of both end-of-pipe treatment and in-plant process control must be considered. In the normal operation of biological treatment systems, especially those receiving variable loading, appreciable deviations from the average waste reduction efficiency are to be expected in daily performance. Such is the case in the soap and detergent manufacturing industry even though intensive effort is devoted to equalizing loading and maintaining efficiency of the biological treatment system. The 1977 effluent limitations for the thirty day period are based on an average BOD5 reduction of 90 percent and the correspondingly expected reduction of other pollution parameters (e.g., 85 percent for COD). Daily maximums have been based on 75–80 percent reduction of BOD5. The 1983 limitations are based on slightly improved average waste reduction efficiency and greater consistency of performance.

The raw waste loads that have been utilized in developing the recommended limitations for the thirty day period are those attainable with appropriate inplant control technology. As in the case of treatment, it must be recognized that there is potential for daily variation in operation of in-plant control. Within the subcategories two different types of raw waste loads are encountered: very low waste loads which even with careful control may be subject to great increase on any day, and relatively high waste loads which with careful control should be subject to very little daily variation. Typical of the first are the small loads from oleum sulfonation in which a blown pump packing gland could result in a loss equivalent to a normal day's loss in a matter of minutes. Typical of the second are the relatively heavy loads from glycerine concentration for which appreciable increase in any day's load would represent poor control.

In recognition of the potential variation in both end-of-pipe treatment and in-plant control, which could occur independently or concurrently, daily maximum limitations ranging from two to five times the thirty day average have been set.

(viii) Non-water-quality environmental impact. Facets of non-water-quality impact to be considered are solid waste disposal, air quality and land use. Of these three the principal area of impact is solid waste disposal. Other potential areas of impact such as noise and vibration do not merit serious concern.

Solid wastes in the form of sludge will be generated by the biological treatment systems, but they will be of limited volume and innocuous, requiring only minimal custodial care in disposal sites. Incineration of the sludges prior to disposal will reduce them to 5–10 percent of their initial mass and render them even more innocuous. Some sludge will result from the operation of gravity type oily water treaters. This sludge would normally be combined with other waste solids from process and treatment and represents a shift in site, not volume, of solid wastes.

Limited potential for air pollution exists as a result of biological treatment and sludge incineration. Proper design and control will minimize any impact. Conversely, control of air emissions from stacks and vents adds to the aqueous pollutant load when use of wet scrubbers is required, but it is preferable to have the pollutants in the waste waters where they will receive subsequent treatment.

Depending on the size of the plant and the treatment processes employed, the land requirements for treatment will vary from as little as one-half acre to as much as three to five acres. For the existing point sources, or even if applied to the entire industry, this does not represent a serious withdrawal of land from other productive uses. Attainment of zero discharge of pollutants through irrigation with waste waters would require large acreages of land which are not available in the urbanized areas where soap and detergent plants generally are located.

(ix) Economic impact analysis. A study conducted by EPA has concluded that the proposed effluent limitations will not seriously threaten the economic viability of the soap and detergent industry. In fact, there are no expected effects on production, employment, community stability, balance of trade or industry growth resulting from the proposed effluent limitations. Depending on the size of plant and subcategories present, increased costs of production ranging from about 0.6 to 11.0 percent are expected for point source plants. Factors which tend to negate impact of effluent limitations include:

(a) The soap and detergent industry serves an inelastic market with an annual growth of about 5 percent in which increased costs of production can be passed on to the consumer if execessive for internal absorption.

(b) Less than 5 percent of the industry will be affected by imposition of effluent limitatons on point sources.

(c) Disadvantages to point sources resulting from imposition of effluent limitations will largely be offset by increased costs for discharge to municipal systems by other plants.

(d) small producers generally serve a custom account market that is not serviced by large producers. This tends to negate the cost per unit of production penalty attributable to economics of size.

(e) the practice of marketing by brand name tends to negate shifts in sales that might result from variation in increased prices among products.

The report entitled "Development Document for Proposed Effluent Limitations Guidelines and New Source Performance Standards for the Soap and Detergent Manufacturing Point Source Category" details the analysis undertaken in support of the regulations being proposed herein and is available for inspection in the EPA Information Center, Room 227, West Tower, Waterside Mall, Washington, D.C., at all EPA regional offices, and at State water pollution control offices. A supplementary analysis prepared for EPA of the possible economic effects of the proposed regulations is also available for inspection at these locations. Copies of both of these documents are being sent to persons or institutions affected by the proposed regulations, or who have placed themselves on a mailing list for this purpose (see EPA's Advance Notice of Public Review Procedures, 38 FR 21202, August 6, 1973). An additional limited number of copies of both reports are available. Persons wishing to obtain a copy may write the EPA Information Center, Environmental Protection Agency, Washington, D.C. 20460, Attention: Mr. Philip B. Wisman.

SUMMARY OF PUBLIC PARTICIPATION

Prior to this publication, the agencies and groups listed below were consulted and given an opportunity to participate in the development of effluent limitations guidelines and standards proposed for the soap and detergent manufacturing category. All participating agencies have been informed of project developments. An initial draft of the Development Document was sent to all participants and comments were solicited on that report. The following are the principal agencies and groups consulted: (1) Effluent Standards and Water Quality Information Advisory Committee (established under section 515 of the Act); (2) all State and U.S. Territory Pollution Control Agencies; (3) The American Society of Civil Engineers; (4) Government of Guam Trust Territory of the Pacific Islands; (5) The American Society of Mechanical Engineers; (6) Hudson River Sloop Restoration, Inc.; (7) The Conservation Foundation; (8) Environmental Defense Fund, Inc.; (9) Natural Resources Defense Council; (10) Water Pollution Control Federation; (11) National Wildlife Federation; (12) New England Interstate Water Pollution Control Commission; (13) Ohio River Valley Sanitation Commission; (14) Delaware River Basin Commission; (15) The Soap and Detergent Association; (16) Manufacturing Chemists Association; (17) U.S. Department of Commerce; (18) U.S. Department of the Interior; (19) The Water Resources Council; (20) The U.S. Department of Health, Education and Welfare; (21) The U.S. Department of Agriculture.

The following organizations responded with comments: Effluent Standards and Water Quality Information Advisory Committee; General Counsel of the Department of Commerce; United States Department of the Interior; United States Department of Agriculture; United States Department of Health, Education, and Welfare—Food and Drug Administration; California State Water Resources Control Board; Texas Water Quality Board; State of Maine Department of Environmental Protection; Illinois Environmental Protection Agency; Delaware River Basin Commission; State of New York Department of Environmental Conservation; United States Water Resources Council; Pennsylvania Division of Industrial Wastes and Erosion Regulation; The Soap and Detergent Association; Fatty Acid Producer's Council; Glyco Chemicals, Inc.; Stauffer Chemical Company; Texize Chemicals Company; Witco Chemical; and Proctor and Gamble Company.

The primary issues raised in the development of these proposed effluent limitations guidelines and standards of performance and the treatment of these issues herein are as follows:

(1) Additions to the controlled parameters (e.g., total dissolved solids, optic brighteners, bleaches, etc.) and deletion of oil and grease as a controlled parameter (based on redundancy to biochemical oxygen demand) were suggested. Upon re-examination of the controlled parameters, it has been concluded that the suggested additions are controlled by compliance with the proposed limitations or are present at such low levels as to be of no pollutional significance. While oils and greases are substances contributing to biochemical oxygen demand (and also chemical oxygen demand), they have a potential aesthetic impact that is unrelated to oxygen demand and their retention as a controlled parameter is justified.

(2) Several comments have been received that proper consideration has not been given to the impact of wastes on municipal systems and receiving waters and to do so the effluent limitation should be set in terms of concentration such as milligrams per liter or parts per million. Effluent guidelines are directed toward national control of point source discharges, not discharges to municipal systems by existing sources or discharges to specific waterbodies. These are matters for consideration under section 302 (a) and section 307(b) (1) of Public Law 92–500. Moreover, concentration is a function of the degree of dilution, and without concurrent strict limitations on volume of discharge, concentration limits would exert little control over the load.

(3) Applicability of some technology suggested as appropriate for meeting 1983 guidelines and new source performance standards has been questioned. This is especially true for use of surface contact condensers and vacuum pumps to replace barometric condensers in splitting and refining fats. This technology is based on transfer from other industries with similar problems and is only one potential route suggested for meeting some of the 1983 limitations.

Interested persons may participate in this rulemaking by submitting written comments in triplicate to the EPA Information Center, Environmental Protection Agency, Washington, D.C. 20460, Attention: Mr. Philip B. Wisman. Comments on all aspects of the proposed regulations are solicited. In the event comments are in the nature of criticisms as to the adequacy of data which is available, or which may be relied upon by the Agency, comments should identify and, if possible, provide any additional data which may be available and should indicate why such data is essential to the development of the regulations. In the event comments address the approach taken by the agency in establishing an effluent limitation guideline or standard of performance, EPA solicits suggestions as to what alternative approach should be taken and why and how this alternative better satisfies the detailed requirements of sections 301, 304(b), 306, and 307 of the Act.

A copy of all public comments will be available for inspection and copying at the EPA Information Center, Room 227, West Tower, Waterside Mall, 401 M Street S.W., Washington, D.C. A copy of preliminary draft contractor reports, the Development Document and economic study referred to above and certain supplementary materials supporting the study of the industry concerned will also be maintained at this location for public review and copying. The EPA information regulation, 40 CFR Part 2, provides that a reasonable fee may be charged for copying.

All comments received on or before January 25, 1973 will be considered. Steps previously taken by the Environmental Protection Agency to facilitate public response within this time period are outlined in the advance notice concerning public review procedures published on August 6, 1973 (38 FR 21202).

Dated: December 7, 1973.

JOHN QUARLES,
Acting Administrator.

It is proposed that 40 CFR Chapter I be amended by the addition of a new Part 417 to read as follows:

PART 417—EFFLUENT LIMITATIONS GUIDELINES FOR EXISTING SOURCES AND STANDARDS OF PERFORMANCE AND PRETREATMENT STANDARDS FOR NEW SOURCES FOR THE SOAP AND DETERGENT MANUFACTURING POINT SOURCE CATEGORY

Subpart A—Soap Manufacturing By Batch Kettle Subcategory

Sec.
417.10 Applicability; description of soap manufacturing by batch kettle subcategory.
417.11 Specialized definitions.
417.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.14 Standards of performance for new sources.
417.15 Pretreatment standards for new sources.

Subpart B—Fatty Acid Manufacturing By Fat Splitting Subcategory

Sec.
417.20 Applicability; description of fatty acid manufacturing by fat splitting subcategory.
417.21 Specialized definitions.
417.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.24 Standards of performance for new sources.
417.25 Pretreatment standards for new sources.

Subpart C—Soap Manufacturing By Fatty Acid Neutralization Subcategory

Sec.
417.30 Applicability; description of soap manufacturing by fatty acid neutralization subcategory.
417.31 Specialized definitions.
417.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by application of the best available technology economically achievable.
417.34 Standards of performance for new sources.
417.35 Pretreatment standards for new sources.

Subpart D—Glycerine Concentration Subcategory

Sec.
417.40 Applicability; description of glycerine concentration subcategory.
417.41 Specialized definitions.
417.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.44 Standards of performance for new sources.
417.45 Pretreatment standards for new sources.

Subpart E—Glycerine Distillation Subcategory

Sec.
417.50 Applicability; description of glycerine distillation subcategory.
417.51 Specialized definitions.
417.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.54 Standards of performance for new sources.
417.55 Pretreatment standards for new sources.

Subpart F—Manufacture of Soap Flakes and Powders Subcategory

Sec.
417.60 Applicability; description of manufacture of soap flakes and powders subcategory.
417.61 Specialized definitions.
417.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by application of the best available technology economically achievable.
417.64 Standards of performance for new sources.
417.65 Pretreatment standards for new sources.

Subpart G—Manufacture of Bar Soaps Subcategory

Sec.
417.70 Applicability; description of manufacture of bar soaps subcategory.
417.71 Specialized definitions.
417.72 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.73 Effluent limitations guidelines representing the degree of effluent reduction attainable by theapplication of the best available technology economically achievable.
417.74 Standards of performance for new sources.
417.75 Pretreatment standards for new sources.

Subpart H—Manufacture of Liquid Soaps Subcategory

Sec.
417.80 Applicability; description of manufacture of liquid soaps subcategory.
417.81 Specialized definitions.
417.82 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.83 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.84 Standards of performance for new sources.
417.85 Pretreatment standards for new sources.

Subpart I—Oleum Sulfonation and Sulfation Subcategory

Sec.
417.90 Applicability; description of oleum sulfonation and sulfation subcategory.
417.91 Specialized definitions.
417.92 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.93 Effluent limitations guidelines representing the degree of effluent reduction attainable by application of the best available technology economically achievable.
417.94 Standards of performance for new sources.
417.95 Pretreatment standards for new sources.

Subpart J—Air-SO3 Sulfation and Sulfonation Subcategory

417.100 Applicability; description of air SO3 sulfonation subcategory.
417.101 Specialized definitions.
417.102 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.103 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.104 Standards of performance for new sources.
417.105 Pretreatment standards for new sources.

Subpart K—SO3 Solvent and Vacuum Sulfonation Subcategory

417.110 Applicability; description of SO3 solvent and vacuum sulfonation subcategory.
417.111 Specialized definitions.
417.112 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.113 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.114 Standards of performance for new sources.
417.115 Pretreatment standards for new sources.

Subpart L—Sulfamic Acid Sulfation Subcategory

417.120 Applicability; description of sulfamic acid sulfation subcategory.
417.121 Specialized definitions.
417.122 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.123 Effluent limitations guidelines representing the degree of effluent reduction attainable by application of the best available technology economically achievable.
417.124 Standards of performance for new sources.
417.125 Pretreatment standards for new sources.

Subpart M—Chlorosulfonic Acid Sulfation Subcategory

Sec.
417.130 Applicability; description of chlorosulfonic acid sulfation subcategory.

Sec.
417.131 Specialized definitions.
417.132 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.133 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.134 Standards of performance for new sources.
417.135 Pretreatment standards for new sources.

Subpart N—Neutralization of Sulfuric Acid Esters and Sulfonic Acids Subcategory

Sec.
417.140 Applicability; description of neutralization of sulfuric acid esters and sulfonic acids subcategory.
417.141 Specialized definitions.
417.142 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.143 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.144 Standards of performance for new sources.
417.145 Pretreatment standards for new sources.

Subpart O—Manufacture of Spray Dried Detergents Subcategory

Sec.
417.150 Applicability; description of manufacture of spray dried detergents subcategory.
417.151 Specialized definitions.
417.152 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.153 Effluent limitations guidelines representing the degree of effluent reduction attainable by application of the best available technology economically achievable.
417.154 Standards of performance for new sources.
417.155 Pretreatment standards for new sources.

Subpart P—Manufacture of Liquid Detergents Subcategory

Sec.
417.160 Applicability; description of manufacture of liquid detergents subcategory.
417.161 Specialized definitions.
417.162 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
417.163 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
417.164 Standards of performance for new sources.
417.165 Pretreatment standards for new sources.

Subpart Q—Manufacturing of Detergents by Dry Blending Subcategory

Sec.
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Subpart A—Soap Manufacturing by Batch Kettle Subcategory

§ 417.10 Applicability; description of soap manufacturing by batch kettle subcategory.

The provisions of this subpart are applicable to discharges resulting from operations in which neat soap is produced through saponification of animal and vegetable fats and oils by boiling in kettles.

§ 417.11 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "neat soap" shall mean the solution of completely saponified and purified soap containing about 20–30 percent water which is ready for final formulation into a finished product.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.80 kg/kkg of anhydrous product (0.80 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.60 kg/kkg of anhydrous product (0.60 lb/1000 lb).
COD	Maximum for any one day 2.25 kg/kkg of anhydr -us product (2.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.50 kg/kkg of anhydrous product (1.50 lb/1000 lb).
TSS	Maximum for any one day 0.60 kg/kkg of anhydrous product (0.60 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb).
Oil and grease.	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically

achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb).
COD	Maximum for any one day 1.25 kg/kkg of anhydrous product (1.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.05 kg/kkg of anhydrous product (1.05 lb/1000 lb).
TSS	Maximum for any one day 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.14 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
COD	Maximum for any one day 1.20 kg/kkg of anhydrous product (1.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.60 kg/kkg of anhydrous product (0.60 lb/1000 lb).
TSS	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of hnhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.15 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the soap manufacturing by batch kettle subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter, except that for the purposes of this section, § 128.133 of this chapter, shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.14 of this chapter; *provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart B—Fatty Acid Manufacturing by Fat Splitting Subcategory

§ 417.20 Applicability; description of fatty acid manufacturing by fat splitting subcategory.

The provisions of this subpart are applicable to discharges resulting from splitting of fats to fatty acids by hydrolysis and the subsequent processing of the fatty acids (e.g., refining and hydrogenation) to produce a suitable feed material for manufacture of soap by fatty acid neutralization.

§ 417.21 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 2.40 kg/kkg of anhydrous product (2.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.20 kg/kkg of anhydrous product (1.20 lb/1000 lb).
COD	Maximum for any one day 6.60 kg/kkg of anhydrous product (6.60 lb/1000 lb), Maximum average of daily values for any period of thirty consecutive days. 3.30 kg/kkg of anhydrous product (3.30 lb/1000 lb).
TSS	Maximum for any one day 4.40 kg/kkg of anhydrous product (4.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 2.20 kg/kkg of anhydrous product (2.20 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.60 kg/kkg of anhydrous product (0.60 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb)
pH	Within the range of 6.0 to 9.0.

(a) If refined fatty acids are hydrogenated the following additional allowances shall apply:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
COD	Maximum for any one day 0.35 kg/kkg of anhydrous product (0.35 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb).
TSS	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or

pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb).
COD	Maximum for any one day 1.80 kg/kkg of anhydrous product (1.80 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb).
TSS	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

(a) If refined fatty acids are hydrogenated the following additional allowances shall apply:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
COD	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb).
TSS	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.24 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb).
COD	Maximum for any one day 1.80 kg/kkg of anhydrous product (1.80 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb).
TSS	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

(a) If refined fatty acids are hydrogenated the following additional allowances shall apply:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
COD	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb).
TSS	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.25 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the fatty acid manufacturing by fat splitting subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter, except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.24 of this chapter; *provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart C—Soap Manufacturing by Fatty Acid Neutralization Subcategory

§ 417.30 Applicability; description of soap manufacturing by fatty acid neutralization subcategory.

The provisions of this subpart are applicable to discharges resulting from manufacturing of neat soap by neutralizing refined fatty acids with an alkaline material in approximately stoichiometric amounts in batch or continuous operations.

§ 417.31 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "neat soap" shall mean the solution of completely saponified and purified soap containing about 20–30 percent water which is ready for final formulation into a finished product.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently

available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.34 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.35 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the fatty acid neutralization subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of the chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.34 of this chapter: *Provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart D—Glycerine Concentration Subcategory

§ 417.40 Applicability; description of glycerine concentration subcategory.

The provisions of this subpart are applicable to discharges resulting from concentraton of sweet water from saponification or fat splitting to approximately 60 to 80 percent crude glycerine content.

§ 417.41 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "sweet water" shall mean the solution of 8–10 percent crude glycerine and 90–92 percent water that is a by-product of saponification or fat splitting.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 2.25 kg/kkg of anyhydrous product (2.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.50 kg/kkg of anhydrous product (1.50 lb/1000 lb).
COD	Maximum for any one day 6.50 kg/kkg of anhydrous product (6.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 4.50 kg/kkg of anhydrous product (4.50 lb/1000 lb).
TSS	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
Oil and Grease.	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be disavailable technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb).
COD	Maximum for any one day 1.50 kg/kkg of anhydrous product (1.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.20 kg/kkg of anhydrous product (1.20 lb/1000 lb).
TSS	Maximum for any one day 0.12 kg/kkg of anhydrous product (0.12 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.44 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb).
COD	Maximum for any one day 1.50 kg/kkg of anhydrous product (1.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.20 kg/kkg of anhydrous product (1.20 lb/1000 lb).
TSS	Maximum for any one day 0.12 kg/kkg of anhydrous product (0.12 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.45 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the glycerine concentration subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.44 of this chapter; *Provided,* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart E—Glycerine Distillation Subcategory

§ 417.50 Applicability; description of glycerine distillation subcategory.

The provisions of this subpart are applicable to discharges resulting from production of finished glycerine of various grades (e.g. USP) concentrated from crude glycerine by means of distillation.

§ 417.51 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.75 kg/kkg of anhydrous product (0.75 lb/1000 lb). Maximum average of daily values for any period of thirty consecuitve days 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb).
COD	Maximum for any one day 2.25 kg/kkg of anhydrous product (2.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.50 kg/kkg of anhydrous product (1.50 lb/1000 lb).
TSS	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
COD	Maximum for any one day 1.20 kg/kkg of anhydrous product (1.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb).
TSS	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.54 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
COD	Maximum for any one day 1.20 kg/kkg of anhydrous product (1.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb).
TSS	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.55 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the glycerine distillation subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.54 of this chapter; *provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart F—Manufacture of Soap Flakes and Powders Subcategory

§ 417.60 Applicability; description of soap flakes and powders subcategory.

The provisions of this subpart are applicable to discharges resulting from all operations associated with the manufacture of soap flakes and powders, commencing with the drying of the neat soap to and including packaging of the finished flakes and powders.

§ 417.61 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart.

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.64 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes,

operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.65 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the manufacture of soap flakes and powders subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter, except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.64 of this chapter; *Provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart G—Manufacture of Bar Soaps Subcategory

§ 417.70 Applicability; description of manufacture of bar soaps subcategory.

The provisions of this subpart are applicable to discharges resulting from all operations associated with conversion of neat soap to finished bar soaps, including drying, milling, plodding, stamping and packaging.

§ 417.71 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "neat soap" shall mean the solution of completely saponified and purified soap containing about 20–30 percent water which is ready for final formulation into a finished product.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.72 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.34 kg/kkg of anhydrous product (0.34 lb/1000 lb).
COD	Maximum for any one day 1.25 kg/kkg of anhydrous product (1.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.85 kg/kkg of anhydrous product (0.85 lb/1000 lb).
TSS	Maximum for any one day 0.85 kg/kkg of anhydrous product (0.85 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.58 kg/kkg of anhydrous product (0.58 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.06 kg/kkg of anhydrous product (0.06 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.73 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
COD	Maximum for any one day 0.75 kg/kkg of anhydrous product (0.75 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.60 kg/kkg of anhydrous product (0.60 lb/1000 lb).
TSS	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.34 kg/kkg of anhydrous product (0.34 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.74 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
COD	Maximum for any one day 0.75 kg/kkg of anhydrous product (0.75 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.60 kg/kkg of anhydrous product (0.60 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
TSS	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.34 kg/kkg of anhydrous product (0.34 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.75 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the bar soaps subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.74 of this chapter; *provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart H—Manufacture of Liquid Soaps Subcategory

§ 417.80 Applicability; description of manufacture of liquid soaps subcategory.

The provisions of this subpart are applicable to discharges resulting from the blending of ingredients employed in the manufacture of liquid soaps and the packaging of the finished products.

§ 417.81 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended nonfilterable solids.

§ 417.82 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.83 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.84 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristics	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.85 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the liquid soaps subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this

chapter except that for the purposes of his section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.84 of this chapter; *Provided,* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart I—Oleum Sulfonation and Sulfation Subcategory

§ 417.90 Applicability; description of oleum sulfonation and sulfation subcategory.

The provisions of this subpart are applicable to discharges resulting from the manufacture of sulfonic acid and sulfuric acid esters by means of sulfonation and sulfation of raw material, including but not limited to petroleum derived alkyls, employing oleum in either continuous or batch processes.

§ 417.91 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.92 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
COD	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb).
TSS	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.93 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
COD	Maximum for any one day 0.27 kg/kkg of anhydrous product (0.27 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days (0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb).
TSS	Maximum for any one day 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.21 kg/kkg of anhydrous product (0.21 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.94 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
TSS	Maximum for any one day 0.06 kg/kkg of anhydrous product (0.06 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.12 kg/kkg of anhydrous product (0.12 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.95 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source

within the oleum sulfonation and sulfation subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.94 of this chapter; *provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart J—Air SO3 Sulfation and Sulfonation Subcategory

§ 417.100 Applicability; description of air SO3 sulfation and sulfonation subcategory.

The provisions of this subpart are applicable to discharges resulting from the manufacture of sulfonic acid and sulfuric acid esters by means of sulfation and sulfonation employing air and sulfur trioxide SO3, in either continuous or batch processes.

§ 417.101 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.102 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
COD	Maximum for any one day 3.60 kg/kkg of anhydrous product (3.60 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.35 kg/kkg of anhydrous product (1.35 lb/1000 lb).
TSS	Maximum for any one day 0.90 kg/kkg of anhydrous product (0.09 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.15 kg/kkg of anhydrous Within the range of 6.0 to product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.103 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.19 kg/kkg of anhydrous product (0.19 lb/1000 lb).
COD	Maximum for any one day 1.10 kg/kkg of anhydrous product (1.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.55 kg/kkg of anhydrous product (0.55 lb/1000 lb).
TSS	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.36 kg/kkg of anhydrous product (0.36 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.18 kg/kkg of anhydrous product (0.18 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.104 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.18 kg/kkg of anhydrous product (0.18 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb).
COD	Maximum for any one day 0.80 kg/kkg of anhydrous product (0.80 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb).
TSS	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.18 kg/kkg of anhydrous product (0.18 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
Oil and Grease.	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.105 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the air SO3 sulfation and sulfonation subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.102 of this chapter; *Provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart K—SO3 Solvent and Vacuum Sulfonation Subcategory

§ 417.110 Applicability; description of SO3 solvent and vacuum sulfonation subcategory.

The provisions of this subpart are applicable to discharges resulting from operations in which undiluted SO3 and an organic reactant are fed through a mixing nozzle into a vacuum reactor where the sulfonation of the organic reactant takes place.

§ 417.111 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(d) the following abbreviations shall have the following meaning: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.112 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
COD	Maximum for any one day 1.90 kg/kkg of anhydrous product (1.90 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.35 kg/kkg of anhydrous product (1.35 lb/1000 lb).
TSS	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.113 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
COD	Maximum for any one day 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.20 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.114 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
COD	Maximum for any one day 0.80 kg/kkg of anhydrous product (0.80 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
Oil and Grease.	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.115 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the SO3 solvent and vacuum sulfonation subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.114 of this chapter; *provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment work shall be correspondingly reduced for that pollutant.

Subpart L—Sulfamic Acid Sulfation Subcategory

§ 417.120 Applicability; description of sulfamic acid sulfation subcategory.

The provisions of this subpart are applicable to discharges resulting from operations in which sulfamic acid is employed as the sulfating agent.

§ 417.121 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(d) the following abbreviations shall have the following meaning: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.122 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
COD	Maximum for any one day 1.90 kg/kkg of anhydrous product (1.90 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.35 kg/kkg of anhydrous product (1.35 lb/1000 lb).
TSS	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
Oil and grease.	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.123 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
COD	Maximum for any one day 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and grease.	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.124 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
COD	Maximum for any one day 0.80 kg/kkg of anhydrous product (0.80 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
Oil and Grease.	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.125 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the sulfamic acid sulfation subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.124 of this chapter; *provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart M—Chlorosulfonic Acid Sulfation Subcategory

§ 417.130 Applicability; description of chlorosulfonic acid sulfation subcategory.

The provisions of this subpart are applicable to discharges resulting from sulfation of alcohols, alkylphenols and alcohol ethoxylates utilizing chlorosulfonic acid as sulfating agent.

§ 417.131 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "oil and grease" shall mean those components of a waste water amendable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(c) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(d) the following abbreviations shall have the following meaning: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.132 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb). Maximum average of daily value for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
COD	Maximum for any one day 1.90 kg/kkg of anhydrous product (1.90 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.35 kg/kkg of anhydrous product (1.35 lb/1000 lb).
TSS	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.45 kg/kkg of anhydrous Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.133 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.35 kg/kkg of anhydrous product (0.35 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
COD	Maximum for any one day 1.50 kg/kkg of anhydrous product (1.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.75 kg/kkg of anhydrous product (0.75 lb/1000 lb).
TSS	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.06 kg/kkg of anhydrous product (0.06 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.134 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
COD	Maximum for any one day 1.25 kg/kkg of anhydrous product (1.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.75 kg/kkg of anhydrous product (0.75 lb/1000 lb).
TSS	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
Oil and Grease.	Maximum for any one day 0.06 kg/kkg of anhydrous product (0.06 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.135 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the chlorosulfonic acid sulfation subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.134 of this chapter; *provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart N—Neutralization of Sulfuric Acid Esters and Sulfonic Acids Subcategory

§ 417.140 Applicability; description of neutralization of sulfuric acid esters and sulfonic acids subcategory.

The provisions of this subpart are applicable to discharges resulting from continuous or batch neutralization of sulfated and sulfonated alkylbenzenes, alcohols and other materials to convert them to neutral salts.

§ 417.141 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(c) the term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(d) the following abbreviations shall have the following meaning:

(1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilogram(s); (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended nonfilterable solids.

§ 417.142 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.143 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.144 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
TSS	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Surfactants	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0

§ 417.145 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the neutralization of sulfuric acid esters and sulfonic acids subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.144 of this chapter; *Provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart O—Manufacture of Spray Dried Detergents Subcategory

§ 417.150 Applicability; description of manufacture of spray dried detergents subcategory.

The provisions of this subpart are applicable to discharges resulting from all operations associated with the manufacture of spray dried detergents, including but not limited to assembly and storage of raw materials, crutching, spray drying, blending, (including tumble spraying of additives) and packaging.

§ 417.151 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(c) the term "normal operation" of a spray drying tower shall mean operation utilizing low (or no) nonionic content formulations with few associated air quality problems from stack gases, and without more than 6 turnarounds in a 30-day period, thus permitting complete recycle of all waste water.

(d) the term "air quality restricted operation" of a spray drying tower shall mean an operation utilizing high nonionic content formulations with the associated need for wet scrubbing to maintain the required quality of stack gases, at a rate which produces more waste water than can be recycled to process.

(e) the term "fast turnaround operation" of a spray drying tower shall mean operation involving more than 6 changes of formulation in a 30-day period that are of such degree and type (e.g. high phosphate to no phosphate) as to require cleaning of the tower to maintain minimal product quality.

(f) the term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(g) the following abbreviations shall have the following meaning: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.152 Effluent limitations guidelins representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

(a) For normal operation of spray drying towers as defined above, the following values pertain:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

(b) For air quality restricted operations of a spray drying tower, but only when a high rate of scrubbing is in operation which produces more water than can be recycled to the process, the following values pertain:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.12 kg/kkg of anhydrous product (0.12 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb).
COD	Maximum for any one day 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.35 kg/kkg of anhydrous product (0.35 lb/1000 lb).
TSS	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Surfactants	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

(c) For fast turnaround operation of a spray tower, the following discharges shall be allowed in addition to the appropriate values from either paragraph (a) or (b) of this section: the maximum for any one day when the number of turnarounds exceeds six in any particular thirty day period shall be the sum of the appropriate value below and from paragraph (a) or (b) of this section; and the maximum average of daily values for any period of thirty days shall be the value shown below multiplied by the number of turnarounds in excess of six within the particular thirty day period plus the appropriate value from paragraph (a) or (b) of this section.

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
COD	Maximum for any one day 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0

§ 417.153 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

(a) For normal operation of spray drying towers as defined above, the following values pertain:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

(b) For air quality restricted operations of a spray drying tower, but only when a high rate of scrubbing is in operation which produces more water than can be recycled to the process, the following values pertain:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.06 kg/kkg of anyhdrous product (0.06 lb/1000 lb).
COD	Maximum for any one day 0.35 kg/kkg of anhydrous product (0.35 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb).
TSS	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
Surfactants	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

(c) For fast turnaround operation of a spray tower, the following discharges shall be allowed in addition to the appropriate values from either paragraph (a) or (b) of this section: the maximum for any one day when the number of turnarounds exceeds six in any particular thirty day period shall be the sum of the appropriate value below and from paragraph (a) or (b) of this section; and the maximum average of daily values for any period of thirty days shall be the value shown below multiplied by the number of turnarounds in excess of six within the particular thirty day period plus the appropriate value from paragraph (a) or (b) of this section.

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
COD	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day (0.012 lb/100 lb). 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.154 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

(a) For normal operation of spray drying towers as defined above, the following values pertain:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

(b) For air quality restricted operations of a spray drying tower, but only when a high rate of scrubbing is in operation which produces more water than can be recycled to the process, the following values pertain:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.06 kg/kkg of anhydrous product (0.06 lb/1000 lb).
COD	Maximum for any one day 0.35 kg/kkg of anhydrous product (0.35 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb).
TSS	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
Surfactants	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Oil and grease.	Maximum for any one day product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

(c) For fast turnaround operation of a spray tower the following discharges shall be allowed in addition to the appropriate values from either paragraph (a) or (b) of this section: the maximum for any one day when the number of turnarounds exceeds six in any particular thirty day period shall be the sum of the appropriate value below and from paragraph (a) or (b) of this section; and the maximum average of daily values for any period of thirty days shall be the value shown below multiplied by the number of turnarounds in excess of six within the particular thirty day period plus the appropriate value from paragraph (a) or (b) of this section.

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
COD	Maximum for any one day 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Surfactants	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.155 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the manufacture of spray dried detergents subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter, except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.154 of this chapter: *Provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart P—Manufacture of Liquid Detergents Subcategory

§ 417.160 Applicability; description of manufacture of liquid detergents subcategory.

The provisions of this subpart are applicable to discharges resulting from all operations associated with the manufacture of liquid detergents, commencing with the blending of ingredients, to and including bottling or packaging finished products.

§ 417.161 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(c) the term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(d) the following abbreviations shall have the following meaning: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.162 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
COD	Maximum for any one day 0.90 kg/kkg of anhydrous product (0.90 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.60 kg/kkg of anhydrous product (0.60 lb/1000 lb).
TSS	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
Surfactants	Maximum for any one day 0.25 kg/kkg of anhydrous product (0.25 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.13 kg/kkg of anhydrous product (0.13 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.163 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.12 kg/kkg of anhydrous product (0.12 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
COD	Maximum for any one day 0.45 kg/kkg of anhydrous product (0.45 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.22 kg/kkg of anhydrous product (0.22 lb/1000 lb).
TSS	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product 0.005 lb/1000 lb).
Surfactants	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.164 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitations*
BOD5	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
COD	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.22 kg/kkg of anhydrous product (0.22 lb/1000 lb).
TSS	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
Surfactants	Maximum for any one day 0.09 kg/kkg of anhydrous product (0.09 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.165 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the manufacture of liquid detergents subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.164 of this chapter; *Provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart Q—Manufacture of Detergents by Dry Blending Subcategory

§ 417.170 Applicability; description of manufacture of detergents by dry blending subcategory.

The provisions of this subpart are applicable to discharges resulting from operations associated with the manufacture of detergents by means of the blending of dry ingredients; including, but not limited to blending and subsequent packaging.

§ 417.171 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(c) The term "oil and grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.172 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days (0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
Surfactants	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.173 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.9–9.0.

§ 417.174 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.07 kg/kkg of anhydrous product (0.07 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.005 kg/kkg of anhydrous product (0.005 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.175 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the manufacture of detergents by dry blending subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chaper except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.174 of this chapter; *Provided* That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart R—Manufacture of Drum Dried Detergents Subcategory

§ 417.180 Applicability; description of manufacture of drum dried detergents subcategory.

The provisions of this subpart are applicable to discharges resulting from operations associated with the manufacture of detergents by drum drying, including, but not limited to, drying of formulations on heated drums or rollers, conversion of dried detergents to powder or flakes, and packaging of finished products.

§ 417.181 Specialized definitions.

For the purpose of this subpart:

For the purpose of this subpart:

(a) The term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(c) The term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilograms; (5) "lb" shall mean pounds(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.182 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.08 kg/kkg of anhydrous product (0.08 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.183 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.06 kg/kkg of anhydrous product (0.06 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.184 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
COD	Maximum for any one day 0.06 kg/kkg of anhydrous product (0.06 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.05 kg/kkg of anhydrous product (0.05 lb/1000 lb).
TSS	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Surfactants	Maximum for any one day 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.01 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.185 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the drum dried detergents subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.184, of this chapter *provided*, That, if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

Subpart S—Manufacture of Detergent Bars and Cakes Subcategory

§ 417.190 Applicability; description of manufacture of detergent bars and cakes subcategory.

The provisions of this subpart are applicable to discharges resulting from operations associated with the manufacture of detergent bars and cakes, including, but not limited to, drying, milling, plodding, stamping and packaging.

§ 417.191 Specialized definitions.

For the purpose of this subpart:

(a) the term "anhydrous product" shall mean the theoretical product that would result if all water were removed from the actual product.

(b) the term "surfactant" shall mean those methylene blue active substances amenable to measurement by the method described in "Methods for Chemical Analysis of Water and Wastes," 1971, Environmental Protection Agency, Analytical Quality Control Laboratory, page 131.

(c) The term "oil & grease" shall mean those components of a waste water amenable to measurement by the method described in "1972 Annual Book of ASTM Standards, Part 23," 1972, Standard D1783–70, page 445.

(d) the following abbreviations shall have the following meanings: (1) "BOD5" shall mean five day biochemical oxygen demand; (2) "COD" shall mean chemical oxygen demand; (3) "kg" shall mean kilogram(s); (4) "kkg" shall mean 1000 kilogram(s); (5) "lb" shall mean pound(s); and (6) "TSS" shall mean total suspended non-filterable solids.

§ 417.192 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of best practicable control technology currently available by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 1.10 kg/kkg of anhydrous product (1.10 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.70 kg/kkg of anhydrous product (0.70 lb/1000 lb).
COD	Maximum for any one day 4.50 kg/kkg of anhydrous product (4.50 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 3.3 kg/kkg of anhydrous product (3.3 lb/1000 lb).

Effluent characteristic	*Effluent limitation*
TSS	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
Surfactants	Maximum for any one day 0.75 kg/kkg of anhydrous product (0.75 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.50 kg/kkg of anhydrous product (0.50 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.04 kg/kkg of anhydrous product (0.04 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	within the range of 6.0 to 9.0.

§ 417.193 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged after application of the best available technology economically achievable by a point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
COD	Maximum for any one day 1.55 kg/kkg of anhydrous product (1.55 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.35 kg/kkg of anhydrous product (1.35 lb/1000 lb).
TSS	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.01 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Surfactants	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.194 Standards of performance for new sources.

The following limitations constitute the quantity or quality of pollutants or pollutant properties which may be discharged reflecting the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants by a new point source subject to the provisions of this subpart:

Effluent characteristic	*Effluent limitation*
BOD5	Maximum for any one day 0.40 kg/kkg of anhydrous product (0.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb).
COD	Maximum for any one day 1.40 kg/kkg of anhydrous product (1.40 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 1.35 kg/kkg of anhydrous product (1.35 lb/1000 lb).
TSS	Maximum for any one day 0.15 kg/kkg of anhydrous product (0.15 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.10 kg/kkg of anhydrous product (0.10 lb/1000 lb).
Surfactants	Maximum for any one day 0.30 kg/kkg of anhydrous product (0.30 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.20 kg/kkg of anhydrous product (0.20 lb/1000 lb).
Oil and Grease.	Maximum for any one day 0.03 kg/kkg of anhydrous product (0.03 lb/1000 lb). Maximum average of daily values for any period of thirty consecutive days 0.02 kg/kkg of anhydrous product (0.02 lb/1000 lb).
pH	Within the range of 6.0 to 9.0.

§ 417.195 Pretreatment standards for new sources.

The pretreatment standards under section 307(c) of the Act, for a source within the manufacture of detergent bars and cakes subcategory which is an industrial user of a publicly owned treatment works (and which would be a new source subject to section 306 of the Act, if it were to discharge pollutants to navigable waters), shall be the standard set forth in Part 128 of this chapter except that for the purposes of this section, § 128.133 of this chapter shall be amended to read as follows:

In addition to the prohibitions set forth in § 128.131, the pretreatment standard for incompatible pollutants introduced into a publicly owned treatment works by a major contributing industry shall be the standard of performance for new sources specified in § 417.194, of this chapter: *Provided,* That if the publicly owned treatment works which receives the pollutants is committed, in its NPDES permit, to remove a specified percentage of any incompatible pollutant, the pretreament standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant.

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