PRODUCT AND PRODUCT GROUP DISCHARGES SUBJECT TO EFFLUENT LIMITATIONS AND STANDARDS

for the

ORGANIC CHEMICALS, PLASTICS, AND SYNTHETIC FIBERS POINT SOURCE CATEGORY - 40 CFR 414

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Introduction

Rules of the U.S. Environmental Protection Agency regulate discharges from the production of organic chemicals, plastics and synthetic fibers. Under the Clean Water Act, EPA has promulgated effluent limitations and pretreatment standards controlling these discharges. These regulations are codified in the Code of Federal Register at 40 CFR Subchapter N. EPA has established limitations and standards in a number of different industry classes and categories that address production of organic chemicals. These include the Soap and Detergent Manufacturing Point Source Category (40 CFR Part 417), Petroleum Refining Point Source Category (40 CFR Part 419), the Iron and Steel Point Source Category (40 CFR Part 420), the Pharmaceutical Manufacturing Point Source Category (40 CFR Part 439), the Pesticide Chemicals Point Source Category (40 CFR Part 455) and the Plastics Moulding and Forming Point Source Category (40 CFR Part 463). EPA has also promulgated regulations specific to the production of organic chemicals, plastics and synthetic fibers. These regulations for the Organic Chemicals, Plastics and Synthetic Fibers Point Source Category are codified at 40 CFR Part 414.

The Part 414 regulations apply to discharges from the manufacture of *certain* organic chemical products by manufacturers who report data to the U.S. Department of Commerce for their facilities under the specific Federal classification codes that are identified in the Part 414 regulations. This document will aid the reader in determining whether the regulations in Part 414 apply to its discharges. It first explains how a facility determines whether Part 414 or one of the other subchapter N regulations noted above applies to its operation. Next, it provides an extensive list of products that may be subject to the Part 414 requirements.

1. Summary of 40 CFR 414

This regulation (Title 40 of the Code of Federal Regulations, Part 414) establishes restrictions on wastewater discharges from facilities manufacturing organic chemicals, plastics and synthetic fibers (OCPSF). The Part 414 regulations are one of a number of regulations codified at 40 CFR Subchapter N establishing effluent limitations, pretreatment standards, and new source performance standards for classes and categories of industrial operations.

The OCPSF regulation applies to process wastewater discharges resulting from the manufacture of seven products or product groups at facilities included within five specified U.S. Department of Commerce Bureau of the Census Standard Industrial Classification system (SIC) groups.[1] The regulation, however, does not apply to discharges from the manufacture of those seven products or product groups if included in six other SIC subgroups. Which process wastewaters are subject to this regulation is explained in 40 CFR 414.11. This guidance provides further explanation of how to determine whether or not a particular wastewater is subject to the OCPSF regulation. In addition, the Appendix to this guidance provides additional help in determining when the regulation applies with respect to the manufacture of organic chemicals. EPA intends this guidance to assist EPA and Regional permitting authorities, publicly owned treatment works (POTWs) and regulated industrial sources in interpreting and implementing the OCPSF regulations.

The currently applicable regulations may be found in any edition of the Code of Federal Regulations dated July, 1996 or later. Other documents that may be useful in understanding this regulation are:

- Final Development Document for the OCPSF category, Volume II.
  EPA# 440/1-87/009, October, 1987 (NTIS Accession No. PB88-171335).
  This document gives a listing of OCPSF products applicable to Subpart H.

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[1] SIC codes are four digit numerical codes assigned by the U.S. government to business establishments to identify the primary business of the establishment. The classification was developed to facilitate the collection, presentation, and analysis of data; and to promote uniformity and comparability in the presentation of statistical data collected by various agencies of the federal government, state agencies, and private organizations. The classification covers all economic activities: agriculture, forestry, fishing, hunting, and trapping; mining; construction; manufacturing; transportation; communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; personal, business, professional, repair, recreation, and other services; and public administration.

The Office of Management and Budget published several editions of an official U.S. guide to the SIC codes assigned to establishments by the Federal government, the Standard Industrial Classification Manual. Until 1997, manufacturers reported data on their operations annually to the Census Bureau in the U. S. Department of Commerce using SIC codes to identify their classification of industrial activity. Subsequently, in mid-1997, the Office of OMB announced the establishment of a new economic classification system that replaced the 1987 Standard Industrial Classification Manual with a revised classification system — the North American Industrial Classification System (NAIC). NAIC was developed jointly by the U.S., Canada, and Mexico to provide new comparability in statistics about business activity across North America. The NAIC codes assigned to chemical and allied products production correspond in large part to the earlier SIC codes. See also discussion at page 3, *infra*.

- Supplement to the Development Document for the OCPSF category.
  EPA# 821/R-93-007, 1993 (NTIS Accession No. PB93-214336).
  Among other things, this document describes the rationale for deleting phenol and 2,4-dimethylphenol from the pollutants regulated under Subpart K.

The 2002 U.S. NAIC Manual, *North American Industry Classification System – United States, 2002*, includes definitions for each industry, tables showing correspondence between 2002 NAIC and 1997 NAIC for codes that changed, and a comprehensive index is also available on its web site. To order the 1400-page *2002 Manual*, in print, call NTIS at (800) 553-6847 or (703) 605-6000, or check the NTIS web site. The 1250-page, *1997 Manual*, showing correspondence between 1997 NAIC and 1987 SIC, is also available. The 2002 and 1997 versions of NAIC are available on CD-ROMs, which can be ordered at NTIS.

Also available from the U.S. Bureau of Census on its website are lists of 2002 NAICS codes (with links to definitions), 1997 NAIC codes, tables showing correspondence between the 1007 NAIC and SIC, tables showing correspondence between 1997 NAIC and 2002 NAIC, and other files for downloading.

1.1 Regulated Parameters

The regulations at Part 414 establish effluent limitations for three conventional pollutants — five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS) and pH in Subparts B through H — for direct dischargers (point sources discharging directly to surface waters) as well as limitations and pretreatment standards for certain toxic pollutants[2] at Subpart I through K for direct and indirect dischargers (point sources discharging to a POTW). The limitations for direct dischargers differ depending on whether the discharger employs biological treatment (Subpart I) or non-biological treatment (Subpart J) as its "end of process" treatment. Indirect dischargers are subject to the pretreatment standards in Subpart K. It should be noted that Subparts I, J, and K differ, not only with respect to the specific priority pollutants listed, but in the numerical limits for a particular priority pollutant as well.

1.2 Requirements for Direct and Indirect Dischargers

Both new and existing direct dischargers manufacturing over 5 million pounds of OCPSF products per year are subject to effluent limitations for BOD_5, TSS, pH, and other selected toxic priority pollutants. Direct dischargers that manufacture not more than 5 million pounds of OCPSF products per year are subject only to effluent limitations for BOD_5 and TSS and pH, but are *not* subject to effluent limitations for toxic priority pollutants.

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[2] Section 414.10(c) defines priority pollutants as the "toxic pollutants" listed at 40 CFR 401.15. This is in error. The "65 compounds and classes of compounds" listed at section 401.15 were given legal definition in the 1977 Amendments to the Clean Water Act (CWA). Since analysis of nebulous "classes of compounds" is impractical, EPA specified 126 (originally 129) chemicals to provide analytically explicit examples of the "65 compounds and classes of compounds" and developed methods to analyze for the specified chemicals, which became widely known by the collective term "priority pollutants." The pollutant parameters regulated in Part 414 are listed in the Appendix of 40 CFR 123.

New and existing indirect dischargers must comply with the pretreatment standards in Subpart K if they manufacture products or product groups specified in 40 CFR 414.11. The categorical pretreatment standards at Subpart K do not restrict the discharge of the conventional pollutants: BOD_5, TSS, and pH.

Table 1-1 summarizes the requirements of the OCPSF regulation for both direct and indirect dischargers.

Table 1-1. Summary of 40 CFR Part 414

Type of Discharger	Regulated Parameters	Applicable Subpart(s)
Direct: Manufactures up to $5x10^6$ lbs./yr of OCPSF products.	BOD_5 , TSS, pH	B through H
Direct: Manufactures over $5x10^6$ lbs./yr of OCPSF products and uses end-of-pipe, *biological** treatment technology.	BOD_5 , TSS, pH 'I' Priority pollutants	B through H I
Direct: Manufactures over $5x10^6$ lbs./yr of OCPSF products and does not use end-of-pipe, biological* treatment technology.	BOD_5 , TSS, pH 'J' Priority pollutants	B through H J
Indirect: Any production of OCPSF products.	'K' Priority pollutants	K

* The regulation does not define "end-of-pipe, biological treatment." Biological treatment technology employs microorganisms to biochemically oxidize or degrade organic materials in wastewater. Non-biological treatment technologies, often described as "physical-chemical treatment," do not employ microorganisms but remove materials from wastewater by a physical process (e.g., steam stripping) or a chemical process (e.g., addition of a chemical precipitant) process. Process wastewater in a plant manufacturing OCPSF products may be treated at the "end-of-pipe," "in-plant," or a combination of both. End-of-pipe treatment refers to the application of a treatment technology to process wastewater immediately before final discharge to receiving waters. In-plant treatment refers to the application of a treatment technology to process wastewater prior to its flow to a facility's end-of-pipe treatment system.

2. Identifying and Classifying Products Whose Production May be Subject to the OCPSF Regulation

EPA receives frequent questions from various permitting authorities and the regulated community about how to determine which industrial category regulated by 40 CFR Subchapter N applies to discharges associated with the manufacture of particular chemical products. In many cases, the inquirer asks a two-part question.

(1) Regulations for which industrial category, if any, apply to the manufacture of my product(s)? and

(2) If there are applicable regulations, what effluent limitations or pretreatment standards apply to the manufacture of my product?

Part 414 is unique among EPA's effluent guidelines and standards regulation because it defines the scope and applicability of the regulation in terms of both types of product and how the manufacture of the product is classified in the U.S. Census Bureau Standard Industrial Classification (SIC) codes.

2.1 The SIC Manual and Codes

The SIC Manual (and its successor NAIC Manual) associates SIC codes with a generic description of a group of products of commerce. Typically, this is followed by a list of product groups and individual products that are illustrative of "important products of this industry." The first two digits of the code identify the major industry group, the third digit identifies the industry group, and the fourth digit identifies the industry.

SIC codes were created to classify manufacturing activity for the collection of economic data. For this reason, SIC codes are often technically ambiguous in classifying the products of commerce. For example, a product marketed into different segments of the economy (end uses), or associated with different types of manufacturing activity (industrial categories), may be reported under more than one SIC code. Thus, SIC codes are useful for broadly classifying products into an industrial category, but may not be entirely appropriate in all cases.

2.2 Industrial Categories Applicable to Chemicals and Allied Products

The SIC Manual classified chemicals and allied products under Major Group 28, which is further broken down into industrial groups and subgroups of products. Wastewater discharges associated with the manufacture of some of these product groups may be subject to regulation under provisions of EPA's guidelines and standards regulations at 40 CFR Subchapter N. Table 2-1 summarizes industrial categories of chemicals and allied products that may be subject to those regulations.

Table 2-1. Industrial Categories that May Apply to the Production of Certain Chemicals and Allied Products

SIC Industrial Group	Products	SIC code(s) Classification	May be Subject to 40 CFR
281	Industrial Inorganic Chemicals	2812, 2819	Part 415
282	Plastic Materials and Synthetic Resins Synthetic Rubber Cellulosic and Other Manmade Fibers	2821 2822 2823, 2824	Part 414 Part 428 Part 414
283	Drugs (Pharmaceuticals)	2833, 2834	Part 439
284	Soap, Detergents and Cleaning Preparations	2843	Part 417
285	Paints, Varnishes, Lacquers and Enamels	2851	Part 446
286	Paints, Varnishes, Lacquers and Enamels Gum and Wood Chemicals	2865, 2869 2861, 2899	Part 414 Part 454
287	Agricultural Chemicals (Pesticides)	2879	Part 455
289	Miscellaneous Chemicals	2899	Part 414

2.3 Part 414 Applicability to Production of Chemicals and Chemical Products

As noted previously, Part 414's requirements apply only to discharges associated with the manufacture of products and SIC codes specified at 40 CFR 414.11. See also the discussion in the preamble to the final regulations at 52 FR 42569 (Nov. 5, 1987) and its amendment at 58 FR 36893 (July 9, 1993). The SIC classification of a product should remain consistent with the SIC code under which it has been historically reported.[3]

In determining what products and product groups should be subject to Part 414, EPA relied on the following sources:

a. Responses of plants to the 1983 Clean Water Act section 308 Questionnaire.
b. Domestic chemical production data.[4]
c. Products listed in the 1987 SIC Manual as representative examples of particular SIC codes.

Part 414 applies to process wastewater discharges from facilities which:

1) Manufacture the organic chemicals, plastics and synthetic fibers (or generic groups of these products) listed in Subparts B through H; and

[3] Either to the Census Bureau, to EPA in a '308' Questionnaire, or in the application for the existing permit.
[4] Published in magazines such as *Chemical & Engineering News*, *Chemical Week*, or in catalogs such as the one published by Aldrich Chemical Co.

2) Report their production, either previously under the following SIC codes,[5] or currently under the corresponding NAICS codes.[6]

SIC Codes and NAIC Codes Applicable to Part 414

Products	SIC Codes	NAICS Codes
Organic chemicals	2865, 2869, 2899*	325132, 325192, 325199
Plastics	2821	325211
Synthetic fibers	2823, 2824	325221, 325222

* Part 414 is not applicable to products that are reported under SIC 2899568 and SIC 2899597. EPA did not subject discharges from those operations to Part 414. See Section 414.11(c)(3)(i) and (ii).

Table 2-2 provides a summary of products and product groups whose production may be subject to subparts of Part 414.

Table 2-2. Applicability of Subparts of 40 CFR 414 to Manufacture of Products and Product Groups

Subpart	Manufactured Products
B	Applies only to cellulosic manmade fiber (Rayon) manufactured by the Viscose® process, generally classified and reported under SIC 2823.
C	Applies to all other synthetic fibers (except Rayon) generally classified and reported under SIC 2823 or under SIC 2824. Section 414.30 includes a list of products subject to this subpart. The products whose production may be subject to this subpart are *not limited* to the synthetic fibers listed in section 414.30 as examples.
D	Applies to any plastic product generally classified and reported under SIC 28213 (Thermoplastic Resins). Section 414.40 includes a list of products subject to this subpart. The products whose production may be subject to this subpart are *not limited* to the plastic products listed in section 414.40 as examples.
E	Applies to any plastic product generally classified and reported under SIC 28214 (Thermosetting Resins). Section 414.50 includes a list of products subject to this subpart. The products whose production may be subject to this subpart are *not limited* to the plastic products listed section 414.50 as examples.
F	Applies to commodity organic chemicals and commodity organic chemical groups generally classified and reported under SIC 2865 (Cyclic Crudes and Intermediates, Dyes and Organic Pigments) and SIC 2869 (Industrial Organic Chemicals, Not Elsewhere Classified) . Section 414.60 includes a list of products subject to this subpart The products whose production may be subject to this subpart *are limited* to the specific organic chemicals and organic chemical groups listed in section 414.60.

[5] Section 414.11(a) and the 1987 SIC Manual.
[6] The 1997 NAICS Manual.

G	Applies to bulk organic chemicals and bulk organic chemical groups generally classified and reported under SIC 2865 (Cyclic Crudes and Intermediates, Dyes and Organic Pigments) and SIC 2869 (Industrial Organic Chemicals, Not Elsewhere Classified). The products whose production may be subject to this subpart *are limited* to the specific organic chemicals and organic chemical groups listed in section 414.70.
H	Applies to all other organic chemicals and organic chemical groups not specifically listed in Subpart F or Subpart G that are generally classified and reported under SIC 2865 (Cyclic Crudes and Intermediates, Dyes and Organic Pigments) and SIC 2869 (Industrial Organic Chemicals, Not Elsewhere Classified). The OCPSF Development Document (Vol. II, Appendix II-A, Table VII) lists a number of representative examples of organic chemicals and organic chemical groups that may be subject to Subpart H. The products, however, whose production may be subject to this subpart are *not limited* to the organic chemicals and organic chemical groups listed as examples in the OCPSF Development Document (Vol. II, Appendix II-A, Table VII).

2.4 Applicability of Wastewater from On-Site Auxiliary Operations[7]

Wastewater from *on-site* auxiliary operations at a facility manufacturing OCPSF products are subject to Part 414. Such on-site auxiliary operations include: research laboratories; technical service support labs; bench-scale operations and pilot plants engaged in various stages of product development related to existing manufacturing activities at the facility.

2.5 General Discussion of OCPSF-Related Products Whose Manufacture May Not Be Regulated by Part 414

As specified in Section 414.11, discharges of wastewater from some products listed in Part 414 may not be subject to this regulation under certain conditions. These conditions include the following:

- Products whose manufacture were properly classified and previously reported under specific SIC codes not subject to Part 414.
- Manufacture of products regulated by other industrial categories.
- Manufacture of products by a fermentation process.
- Manufacture of products *solely* by extraction from animal or plant raw materials.

2.5.1 Products Classified and Previously Reported under Specific SIC Codes That Are Not Subject to Part 414

EPA initially proposed[8] to extend the applicability of Part 414 to the manufacture of certain products that were sometimes reported under SIC codes specified for Industrial Groups 284 and 289. EPA, in the final regulation, did not adopt this approach and has specifically excluded these from the scope of Part 414 at section 414.11(c). Part 414 does not apply to products that were properly classified *and previously reported* under specified subgroups of SIC 2843 (surfactants), SIC 2891 (adhesives) and SIC 2899 (sizes). Table 2-3 summarizes the excluded SIC codes and product groups.

[7] Section 414.11(b).
[8] 50 FR 29068 (July 17, 1985) and 51 FR 44082 (Dec. 8, 1986).

Table 2-3. SIC Codes and Product Groups Specified as Not Subject to Part 414

SIC Code[1]	Product group
2843-085	Bulk surfactants (surface active agents)
2891-4[2]	Adhesives, synthetic resin and rubber, including bonding and laminating adhesives.
2891-411	Epoxy adhesives.
2891-424	Phenolic, modified phenolic and resorcinol adhesives.
2891-433	Urea and modified urea adhesives
2891-44	Vinyl-type adhesives
2891-441	Polyvinyl acetate adhesive, latex type
2891-443	Polyvinyl acetate adhesive, solvent type
2891-445	Polyvinyl chloride and copolymer adhesives
2891-447	Other vinyl polymer type adhesives
2891-453	Acrylic adhesives
2891-454	Cyanoacrylate adhesives
2891-455	Polyester adhesives
2891-457	Urethane adhesives
891-461	Styrenic adhesives
2891-465	Hot melt adhesives, including polyamide, polyolefin, and other hot melts.
2891-471	Adhesive films, all types, including pressure-sensitive structural and non-structural
2891-448	Rubber and synthetic resin combination adhesives.
2891-481	Rubber cement, latex type.
2891-483	Rubber cement, solvent type
2899-568[3]	Sizes. Textile, paper and all other types of sizes (dextrine, glue, gum, industrial, rosin, animal, vegetable, and synthetic plastic materials).
2899-597[3]	Industrial chemical specialties, including fluxes (for brazing, soldering, galvanizing, and welding), insulation products (heat, electrical, other), plastic wood preparations, and embalming preparations.

1. SIC codes assigned to these product classifications are from the 1992 Census of Manufacturers.
2. Section 414.11(c) specifically states that Part 414 does not apply to the manufacture of OCPSF products reported under SIC group 28914 and its subgroups. The table also lists some of the other subgroups of SIC 2891 that are not subject to Part 414.
3. Part 414 is not applicable to discharges from the manufacture of products in SIC Codes 2899-568 and 2899-597 under section 414.11(c)(3)(I) &(ii). Other organic chemicals classified in SIC 2899 may be subject to part 414.

2.5.2 Products Listed in Part 414 That Are Regulated by Another Industrial Category Are Not Subject to Part 414 in Certain Circumstances[9]

As shown in Table 2-1, some chemical products are not subject to Part 414 when they are regulated by other industrial categories and have been previously reported under SIC codes for those industrial categories. Although formerly classified in the same umbrella Industrial Groups (282, 286) as other products whose manufacture may be subject to Part 414, synthetic rubber (SIC 2822) and gum and wood chemicals (SIC 2861) are not subject to the Part 414 regulation. In addition, the manufacture of products classified under Industrial Groups 281 (inorganic chemicals), 283 (pharmaceuticals), 285 (paints, varnishes, lacquers) and 287 (fertilizers, pesticides), are also not subject to Part 414. Further, there may be some organic chemicals or related products specifically listed in subparts of Part 414 that may not, in fact, be subject to Part 414 if the product meets certain conditions described in section 414.11.

Part 414 is *not applicable* to discharges of process wastewater from the manufacture of products which are subject to a regulation already promulgated for another industrial category. However, the manufacture of such products may be subject to Part 414 if:

(1) The manufacturing facility has previously reported these products under SIC codes 2865, 2869, or 2821 and

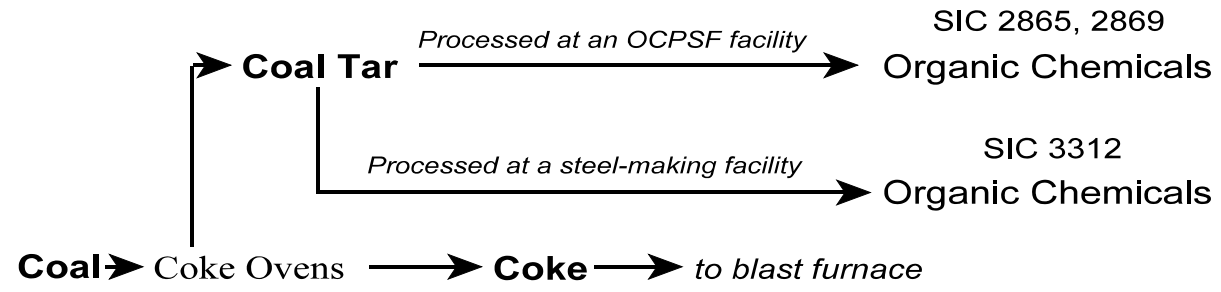
(2) The process wastewater associated with the manufacture of Part 414 products at the facility is segregated and treated in a separate treatment system, or discharged separately to a POTW.

2.5.2.1 Organic Chemicals Regulated by the Iron and Steel Category (40 CFR 420)

Coal tar is a byproduct of the manufacture of coke, which is used in a blast furnace to convert iron ore to pig iron. A number of organic chemicals and other products may be recovered from coal tar by distillation. When organic chemicals are recovered from coal tar crudes as coke oven byproducts *at coke plants* and such operations have been previously reported under SIC 3312, the associated process wastewater is regulated by Part 420 because of the exclusion noted at Section 414.11(d). When organic chemicals in coal tar crudes are recovered from purchased coal tar at off-site manufacturing facilities (i.e., *not* at coke plants) and are included within SIC 2865, the associated process wastewater is regulated by Part 414. These distinctions are illustrated in Figure 2-1.

[9] Section 414.11(d).

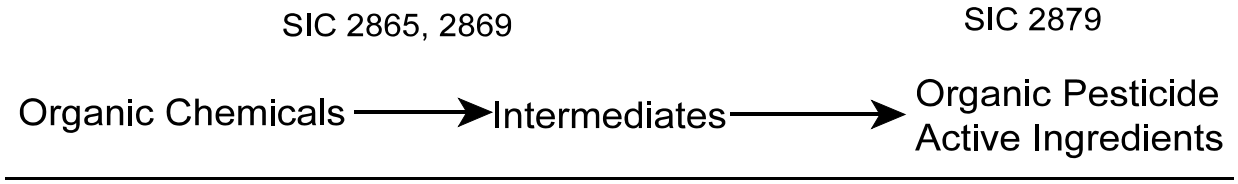
Figure 2-1.



2.5.2.2 Organic Chemicals Regulated by the Pesticides Chemicals Category (40 CFR 455)

Subparts A and B of Part 455 are applicable *only* to process wastewater associated with the *final step* in the manufacture of products that are listed as "organic pesticide active ingredients"[10] and *have been previously reported* under SIC 2879. Organic chemicals being manufactured at the same facility, as an *intermediate* (or intermediate precursor) in the synthesis of an "organic pesticide active ingredient," are specifically excluded from regulation as an organic pesticide chemical (Section 455.20(c)). Process wastewater associated with the synthesis of *intermediates* in the manufacture of "organic pesticide active ingredients" is subject to Part 414. These distinctions are illustrated in Figure 2-2.

Figure 2-2



2.5.2.3 Organic Chemicals Regulated by the Pharmaceutical Category (40 CFR 439)

Part 414 does not apply to discharges associated with the production of organic chemicals that are manufactured as pharmaceutical (medicinal) products or intermediates provided that the manufacture of such organic chemicals represents *more* than 50 percent of the total flow of process wastewater otherwise subject to Part 414 at the pharmaceutical manufacturing facility.[11]

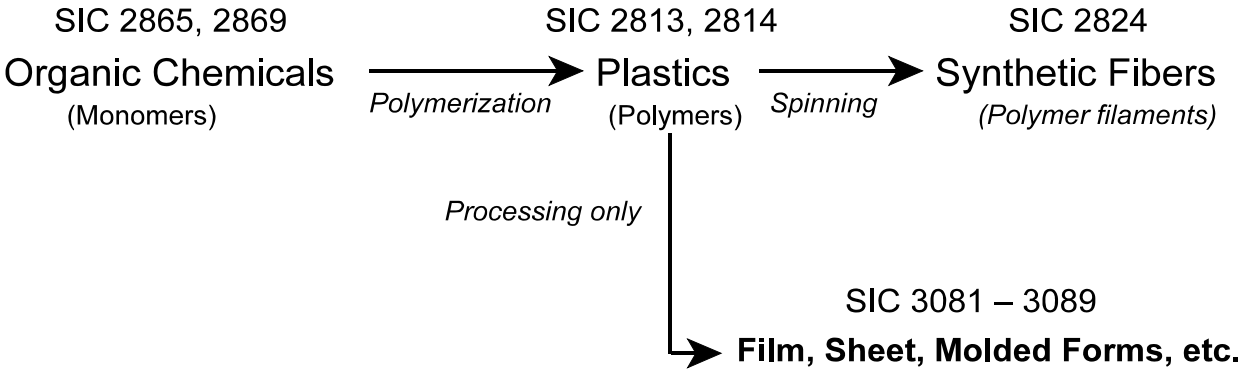
[10] 40 CFR 455.50, Table 1.
[11] 40 CFR 439.0(c)(ll).

2.5.2.4 Products Regulated by the Plastics Molding & Forming Category (40 CFR 463)

The applicability of Part 414 to plastics *production* rather than plastics *processing* is often confused. Plastic products reported under SIC 2821 involve the polymerization of various liquid or gaseous monomers (reactive organic chemicals) into a solid polymeric material, which is typically shipped off-site as pellets or other form. The manufacture of synthetic fibers reported under SIC 2823 involves extruding a melt of such a polymeric material through a spinneret. Cellulosic synthetic fibers, also reported under SIC 2823, are derived by physically modifying cellulose, a naturally occurring polymeric material, through chemical processing.

The manufacture of plastic processing products involves melting the solid polymeric material received from the plastic producer and using mechanical techniques (injection molding, calendering, extrusion, etc.) to reform it into sheets, film, tubes, rods, or special shapes. Part 414 is *not applicable* to process wastewater associated with plastic processing products previously reported under SIC 3081-3089 (formerly SIC 3079), which are regulated by Part 463. These distinctions are illustrated in Figure 2-3.

Figure 2-3



2.5.2.5 Organic Chemicals Regulated by the Soap and Detergent Category (40 CFR 417)

Part 414 is not applicable to fatty acids manufactured by the "splitting" of animal fats (tallow, grease), "natural" glycerin obtained as a co-product, or to alkaline salts of fatty acids obtained by subsequent processing. Such organic chemicals are regulated by Part 417 and, if reported under SIC 2843, would be exempted by Section 414.11(d).

Bulk surface active agents (surfactants) are regulated by part 417 and, if reported under SIC 2843, would be exempted by both Section 414.11(c)(1) and section 414.11(d). Detergents are blends of surfactants and other ingredients which are also regulated by Part 417 and should be entitled to the same exemption from Part 414.

Part 417 is largely without categorical pretreatment standards, except for the pretreatment standards for new sources (PSNS) in Subparts O, Q, and R. Thus, with the exception of products subject to PSNS in these subparts, the Section 414.11(d) exclusion of products regulated by Part 417 applies only to *direct dischargers* subject to Part 414.

2.5.3 Organic Chemical Manufacturing Processes Not Subject to Part 414[12]

Part 414 is not applicable to organic chemicals when manufactured *solely* by:

a. *Extraction* from plant or animal raw materials. Extraction is defined as the separation of raw material components by their selective solubility in a solvent.
   Examples: Palm oil extracted from crushed seeds of the oil palm tree.
   Fragrance chemicals extracted from flower petals.
   Agar extracted from seaweed.

b. *Fermentation*
   Examples: Citric acid, Glutamic acid, Ethanol ("natural")

2.6 Synthetic Fibers

Fibers are made in several forms, each suitable for a particular use. Single filaments (monofilament) may be woven into sheer curtains, knitted into hosiery and used directly for fishing line or brushes, for example. Continuous strands of two or more filaments may be twisted together to form filament *yarn*. Monofilament with larger cross-sectional area (40 denier or less) is sometimes classified with yarns. Large groups of untwisted continuous filaments are called *tow*. Tow can be cut into any desired length, after which it is called *staple*, a form that is suitable for textile spinning. Defined in terms of their monomer(s) composition, some commercially important synthetic fibers are presented in Table 2-4.

Table 2-4. Synthetic Fiber Definitions*

Synthetic Fiber	Definition
Acrylic	Formed from synthetic copolymer composed of at least 85% by weight acrylonitrile. Co-monomer differs from one manufacturer to another, but an example of a co-monomer would be methyl methacrylate.
Modacrylic	Formed from synthetic polymer composed of less than 85%, but at least 35% by weight acrylonitrile.
Rayon (Viscose ®)	Formed from regenerated cellulose (via xanthate) in which substituents have not replaced more than 15% of the hydroxyl groups.
Acetate (Triacetate)	Formed from cellulose acetate, where not less than 92% of the hydroxyl groups are acetylated.
Saran	Formed from synthetic polymer composed of at least 80% by weight vinylidene chloride.

[12] Section 414.11(e).

Nylons	Formed from synthetic polymer having recurring amide groups connected by an aliphatic chain. Nylon 6: Polymer from caprolactam Nylon 66: Polymer from adipic acid + hexamethylene diamine Nylon 11: Polymer from 11-Aminoundecanoic acid Nylon 12: Polymer from dodecanolactam Nylon 6/12: Polymer from caprolactam + dodecanolactam
Polyesters Polyethylene terephthalate Polybutylene terephthalate	Formed from synthetic polymer having recurring ester groups. For example: dihydric alcohol (glycol) + terephthalic acid (TPA). PET: Polymer from ethylene glycol + dimethyl terephthalate (DMT) or TPA. PBT: Polymer from 1,4-butylene glycol + DMT or TPA. Kodel: Polymer from 1,4-di(hydroxymethyl) cyclohexane + DMT.
Spandex	Formed from synthetic block copolymer composed of at least 85% by weight of a segmented polyurethane.
Vinyon	Formed from synthetic polymer composed of at least 85% by weight vinyl chloride.

* From FTC Regulations, Section 7[c] of the Textile Fiber Products Identification Act.

3. Identifying and Classifying Products Subject to Part 414 at a Plant

Every NPDES permit applicant or industrial discharger to a POTW should develop a list of the products that are manufactured at its facility and include intermediate products of the manufacturing process. Such a list will help the manufacturer, the permitting authority, or the pretreatment program at a POTW to determine which products on the list may be subject to Part 414 (i.e., OCPSF products). Some may be identified as OCPSF products by comparing their chemical names to the names of products and product groups listed as illustrative examples in Subparts B through G, products listed in the Development Document,[13] and under SIC codes applicable to Part 414 in the SIC Manual. But these listings of OCPSF products are not convenient references, even for a chemist. Moreover, a fair number of OCPSF products will not be found there, since the applicability of the Part 414 is *not limited* just to the illustrative products or product groups specifically listed in Subparts C,D,E, and H. As explained previously, another way to identify an OCPSF product is to determine whether it has been previously reported to the Census Bureau, or to the Permitting Authority, under an SIC code regulated by Part 414.

Users, especially those unfamiliar with chemical names (nomenclature), may have difficulty finding and recognizing the names of the plant's products among the OCPSF products listed in various subparts of the regulation and the Development Document. To find a product on the listings of organic chemicals in Subparts F, G, and H, for example, a user must know to search under aliphatics, aromatics, or amine and amides. Even for someone who is familiar with chemical nomenclature, locating a particular product on these lists is not straightforward because the ordering is not entirely alphabetical.

In designing a useful reference to OCPSF products, it was assumed that users would be able to tentatively classify products as an organic chemical, plastic (resin) or synthetic fiber. To make it easier for the user to recognize the names of products subject to Part 414 on the list of products submitted by the facility, names commonly used throughout the OCPSF industry for an organic chemical listed under Subparts F, G, and H were compiled and tabulated in alphabetical order. Since a subpart was designated for each product, finding a product on the facility's list among those listed in Part 414 at once identifies it as an OCPSF product and assigns a subpart. Products that cannot be found among the three tabulated groups may still be identified as an OCPSF product, if the product is closely related to a product or product group that is listed. Plant personnel familiar with chemical nomenclature can be helpful in establishing these connections, or the user may contact EPA.[14]

To use the reference tables, the user should first decide whether the products and intermediate products manufactured at the plant are classified as synthetic fibers, plastics or organic chemicals. Once classified, individual products may then be searched in the appropriate table.

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[13] EPA 440/1-87/009, Oct. 1987,Volume II, Appendix III-A, pp. III-A2 through III-A25.
[14] Office of Water, Engineering & Analysis Division. Phone (202) 566-1000.

Synthetic fibers are listed in Table 2-5, which combines Rayon (Subpart B) and all other synthetic fibers (Subpart C). The index of synthetic fibers in Subpart C is based on generic names recognized in commerce, which are discussed in Section 2.6 (p.13).

Plastics are listed in Table 2-6, which combines Thermoplastic (Subpart D) and Thermosetting (Subpart E) resins. For quick reference, plastic products regulated in Subparts D and E have been indexed separately.

Organic chemicals are listed in the Appendix, which combines products classified in Commodity (Subpart F), Bulk (Subpart G), and Specialty (Subpart H). These regulatory classifications were based on annual domestic production.[15] For quick reference, organic chemical products regulated in Subpart F were indexed in Table 2-7, and those regulated in Subpart G were indexed in Table 2-8. Users may first identify as many OCPSF products as possible from Tables 2-7 and 2-8, and then refer to the combined listing in the Appendix to confirm other OCPSF products regulated in Subpart H. Alternatively, the Appendix may be consulted directly, particularly if the user needs cross-referencing to find an organic chemical product.

[15] OCPSF Development Document, Vol. I, p. IV-5.

4. An Example to Demonstrate the Use of Tables 2-5 to 2-8 and the Appendix

A permit applicant submitted the following list of products manufactured at the plant.

Product	**Search and Classification Logic**
Acetone	Identified as an organic chemical. Found in Table 2-7 under "Acetone."
p-*Amino*phenol	Identified as an organic chemical, but not found in Tables 2-7 or 2-8. Found in the Appendix under "Amino-."
p-Dodecyl*phenol*	Identified as an organic chemical, but not found in Tables 2-7 or 2-8. Not found in the Appendix under "Dodecyl-." Found in the Appendix under "-phenol."
*Formal*in	Identified as an organic chemical. Found in Table 2-7 under "Formaldehyde."
Melamine	Identified as an organic chemical. Found in Table 2-8 under "Melamine."
Mesityl oxide	Identified as an organic chemical, but not found in Tables 2-7 or 2-8. Found in the Appendix under "Mesityl-."
Methylisobutyl *ketone*	Identified as an organic chemical. Found in Table 2-8 under "KETONES," and also in the Appendix under "Methyl-."
Melamine-formaldehyde *resins*	Identified as a plastic by the term "resins." Found in Table 2-6 under "Melamine."
Phenol	Identified as an organic chemical. Found in Table 2-7 under "Phenol."
Phenol-formaldehyde *resins*	Identified as a plastic by the term "resins." Found in Table 2-6 under "Phenolic."

SYNTHETIC FIBERS

Index to Synthetic Fibers — Subpart C

Table 2-5. Combined List of Synthetic Fibers

Synthetic Fiber [a]	**Subpart** [b]	**Remarks, Tradenames** [c]
Acrylic and **Modacrylic**	C	Tradenames: *Acrilan, Aress, Bi-Loft, Creslan, Fina, Zefran.*
Acrylonitrile-Polyvinylpyrrolidone	C*	
Cellulose acetate	C	
Fluorocarbon	C	Tradenames: *Kynar, Tefzel, Teflon, Halar*
Polyamide (aliphatic): Nylon 6	C	Tradenames: *Anso, Anso-X, AnsolV, Camalon, Caprolan, Crepset, Enka, Enkasheer, Enkatron, Enkalure, Enkaloft, Enkalon, Hanover, Multishear, Phase 7, Shareen, Softalon, Starbrite, Zantrel, Zeftron.*
Polyamide (aliphatic): Nylon 66	C	Tradenames: *Antron, Blue C, Cantrece, Cerex, Cordura, DuPont, Hyten, Wellon, Wellstrand*
Polyamide (cyclic aliphatic)	C	Tradenames: *Quiana*
Poly*ar*amid (ar = aromatic)	C	Tradenames: *Kevlar, Nomex*
Polybenzimidazole (PBI)	C	
Polyester	C	Tradenames: *ACE, Angelette, Angelrest, Avlin, ECF, Encron, Enka, Fortrel, Hollofil, Kodel, Polar Guard, Reemay, Serene, Sontara, Superba, Trevira, Wellene.*
Polyolefin: [d] Polyethylene and copolymers Polypropylene	 C C	
Polyphenylene sulfide	C**	
Polyurethane (Spandex)	C	Tradenames: *Cleerspan, DC-100, DC-700, Gloxpan, Lycra*.

Table 2-5. Synthetic Fibers (continued)

Synthetic Fiber [a]	**Subpart** [b]	**Remarks, Tradenames** [c]
Polyvinyl chloride (PVC)	C**	Tradenames: *Vinyon*
Rayon (Viscose)	B	
Monofilaments:		
Nylon 6 and copolymers	C	
Nylon 66 and copolymers	C	
Nylon 612 and copolymers	C*	
Nylon 11 and copolymers	C*	
Nylon 12 and copolymers	C*	
Polycarbonate	C**	
Polyethylene	C**	
Polystyrene	C**	
Polystyrene-Acrylonitrile	C**	Tradenames: *Acrylast*
Polyvinylidene chloride	C**	Tradenames: *Saran*

Explanatory Notes and Footnotes for Table 2-5.

a. Listing of Synthetic Fibers adapted from:
(1) Table II in Vol. II, Appendix III-A, Final Development Document for Effluent Limitations Guidelines and Standards for the Organic Chemicals, Plastics and Synthetic Fibers. EPA 440/1-87/009, October 1987.
(2) OCPSF Product/Process File compiled by the Engineering & Analysis Division of EPA's Office of Water Regulations and Standards, 1976-1983.
(3) *SRI Directory of Chemical Producers*, 1986 Edition, pp. 653-659.

b. Subpart notations:

* = Neither Table II of the OCPSF Development Document, Vol. II, Appendix III-A, nor the Federal Register notice for the final regulation (52 FR 52, November 5, 1987) provide a complete listing of synthetic fibers that may be subject to Part 414. Additional products that may be subject to Part 414 were identified from those shown in the 1986 *SRI Directory of Chemical Producers*.

C* = Indicates the appropriate Subpart for a product not specifically identified in Table II (cited above) that *may* be classified within a "product group" that was listed in Table II. Such products are implied as OCPSF by belonging to a "product group" that was listed in Table II.

C** = Indicates the appropriate Subpart for a product that is not specifically identified in Table II (cited above) and is *not classifiable* within any of the "product groups" that were listed in Table II. Such products are implied as OCPSF by being commercially available synthetic fibers.

c. Tradenames from:
(1) *SRI Directory of Chemical Producers*, 1986 Edition.
(2) *Man-Made Fibers Fact Book*, 1978 Edition, Education Dept., The Man-Made Fiber Producers Association, Inc., 1150 Seventeenth St. NW, Washington, DC 20036.

d. Primarily filament yarn and staple, but may include monofilament and film.

PLASTICS

Index to Thermoplastic Resins — Subpart D

Abietic acid derivatives [1]
ABS
ABS/SAN
Acrylic
Cellulose
Fatty acid [1]
Fluorocarbon
Ionomer
Methylvinyl ether copolymers
Nitrile
Petroleum hydrocarbon
Phenoxy
Polyacrylic acid [2]
Polyamides (Nylons)
Polybutene (Polybutylene)
Polybutenyl succinic anhydride
Polycarbonate
Polyester (saturated)
Polyester (unsaturated) [1]
Polyether ether ketones (PEEK)
Polyethylene copolymers
Polyethylene
Polyimide (polyphthalimide)
Polystyrene
Polystyrene copolymers
Polystyrene terpolymers
Polysulfone
Polyvinyl acetate (PVAc)
Polyvinyl acetate copolymers
Polyvinyl alcohol (PVA)
Polyvinyl butyral (PVB)
Polyvinyl chloride (PVC)
Polyvinyl chloride copolymers
Polyvinylidene chloride
Polyvinyl ether-Maleic anhydride
Polyvinyl formal
Polyvinylpyrrolidone-Styrene
Polyvinyltoluene
Polyvinyltoluene copolymers
Rosin modified or unmodified [1]
Silicone [1]
Vinyl resins (unspecified)

Index to Thermosetting Resins — Subpart E

Alkyds, modified and unmodified
Epoxy
Fumaric acid polyester
Furan (Polyfurfuryl alcohol)
Ketone-Formaldehyde
Melamine
Phenolic
Polyacetal (Acetal) [3]
Polyacrylamide [3]
Polyimide
Polyurethane
Triazone
Urea

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[1] Classified in commerce as a thermosetting resin.
[2] Classified in commerce as an organic chemical.
[3] Classified in commerce as a thermoplastic resin.

Table 2-6. Combined List of Plastics

Plastics (Resins)[a]	Subpart[b]	Remarks,Tradenames[c], Cross-references
Abietic acid derivatives	[D]	An alkyd modifier. Classified in commerce as a thermosetting Resin (Subpart E). See Alkyd resins.
ABS (Acrylonitrile-[Poly]Butadiene-Styrene)	D	Tradenames: *Absinol, Abson, Arylon Cycolac, Arylon T, Blendex, Cycoloy, Cycopac, Cycovin, Decoloy, Dylel, Kralastic, Lustran, Luran, Marbon, Tybrene.*
SAN (Polystyrene-Acrylonitrile)	D	Tradenames: *Absinol, Acrylafil, Lustran, Tyril*
ABS/SAN (Physical blend)	D	
Alkyds, modified and unmodified	E	Tradenames: *Alftalat, Alkydal, Aroflat,* Aroplaz, *Styresol, Styretex, Trak-less.*
Alkyds, Glycerophthalic	E*	
Alkyds, Maleic	E*	
Alkyds, Phthalic	E*	
Alkyds, Rosin (terpene ester)	E*	
Abietic acid ester modified	[D]	Alkyd modifiers. Classified in commerce as
Fatty acid ester modified	[D]	Thermosetting Resins (Subpart E).
Alkyds, Styrenated	E*	
Alkylphenol-Acetylene	D**	
Acrylic resins:	D	Tradenames: *Acrylic MF, Acrylite, Plexiglas, Acronal, Acralene.*
Polymethylmethacrylate	D*	
Polyacrylate esters (latex)	D*	
Polymethacrylate esters (latex)	D*	
Polyacrylate – Methacrylate esters (latex)	D	
Cellulose resins:		
Cellulose acetate	D	
Cellulose acetate butyrate	D	
Cellulose acetate phthalate	D*	
Cellulose acetate propionate	D	
Cellulose nitrate (Nitrocellulose)	X	OCPSF not applicable (414.11d) An explosive reported under SIC 2892.
Cellulose sponge	X	OCPSF not applicable. Product deleted [55 FR 42339 (Oct. 18, 1990)]. May be reported under SIC 3089.
Dicyanodiamide resins	E	
Epoxy resins:	E	Tradenames: *Araldite, Aroflint, Bakelite, Bekipex EP, Capon, Cardolite, Cardon, DEH, DEN, Der, Epiall, Epichlor, Epi-cure, Epi-Rez, Epi-Tex, Epocryl, Epon, Eponol, Epotuf, Hydantoin, Kopox, Kopoxite, Pedigree, Polox, Polyset, Polytool, Quatrex, Tactix*.
Epoxy, modified	E*	
Epoxy, unmodified	E*	
Epoxy, brominated	E*	
Epoxy, cycloalkenyl	E*	
5,5-Dimethylhydantoin – Formaldehyde	E*	
Epoxy, phenoxy (unmodified)	E*	

Plastics (Resins)[a]	Subpart[b]	Remarks,Tradenames[c], Cross-references
Fatty acid resins	[D]	Classified in commerce as Thermosetting Resins (Subpart E). See Alkyd resins.
Fumaric acid polyester resins	E	
Furan (Polyfurfuryl alcohol) resins	E	
Fluorocarbon resins:	D	
Polytetrafluoroethylene (PTFE)	D*	Tradenames: *Fluon, Halon, Teflon.*
Polytetrafluoroethylene + Ethylene	D*	Tradenames: *Tefzel*
Fluorinated polyethylene-propylene	D*	Tradenames: *Teflon-FEP*
Polychlorotrifluoroethylene	D*	Tradenames: *Kel-F81, Aclar, Aclon.*
Polychlorotrifluoroethylene + Ethylene	D*	Tradenames: *Halar*
Polychlorotrifluoroethylene + Vinylidene fluoride	D*	Tradenames: *Aclar, Aclon, Kel-F82.*
Polyvinylidene fluoride	D*	Tradenames: *Foraflon, Kynar.*
Perfluoroalkoxy	D*	Tradenames: *Teflon-PFA*
Glyoxal + Urea + Formaldehyde (textile)	[E]	Textile finishing agent. OCPSF not applicable, if previously reported under SIC 2843 (414.11c).
Ionomer resins:	D**	Tradenames: *Surlyn*
Polyethylene + Acrylic acid	D**	See Polyethylene copolymers
Polyethylene + Methacrylic acid	D**	See Polyethylene copolymers
Ketone-Formaldehyde resins	E	
Acetone + Formaldehyde	E*	
Cyclohexanone + Formaldehyde	E*	
Melamine resins	E	Tradenames: *Admino, Amres, Avisco,*
Melamine + Formaldehyde	E*	*Beckamine, Cascomel, Catadec, Cymel,*
Melamine + Phenol + Formaldehyde	E*	*Kauramin, Luvipol, Melmac, Meltron, Resamin,*
Melamine + Urea + Formaldehyde	E*	*Resimene, Resloom, Syn-U-Tex, Uformite.*
Methylated melamine + Formaldehyde	E*	
Methylvinyl ether copolymers:		
Methyl vinyl ether + Maleic anhydride	D	Tradenames: *Gantrez*
Methyl vinyl ether + Monobutyl maleate	D*	
Methyl vinyl ether + Monobutyl maleate	D*	
Nitrile (Acrylonitrile copolymer)	D**	Tradenames: *Barex, Cycopac, Lopac.*
Petroleum Hydrocarbon resins	D	Tradenames: *Adtac*
Phenolic resins:	E	Tradenames: *Acrylon, Adlock, Aerodux,*
Alkylphenol - Formaldehyde	E*	*Amberol, Amres, Bakelite, Beckacite,*
Amylphenol - Formaldehyde	E*	*Beckopol, Cascophen, Castastock, Catacol,*
Butylphenol - Formaldehyde	E*	*Catacore, Catacote, Catafilm, Cataform,*
Nonylphenol - Formaldehyde	E*	*Durez, Durite, Dyphen, Dyphenite, Foundrez,*
Cresol - Formaldehyde	E*	*Genal, Hycar, Kastor, Kauresin, Phenall,*
Cresylic acid - Formaldehyde	E*	*Phenolls, Phenuren, Poly-phen, Polytool,*
Phenol - Formaldehyde	E*	*Pyroloy, Resinex, Thor, Valite, Vulkadur.*

Plastics (Resins)[a]	Subpart[b]	Remarks,Tradenames[c], Cross-references
Phenolic resins (continued):		
Phenol - Formaldehyde, rosin modified (Rosin Resins)	E*	
Phenol - Resorcinol - Formaldehyde	E*	
Phenol-Terpene (polyterpene)	E*	
Resorcinol - Formaldehyde	E*	
Phenoxy resins	D**	
Polyacetal (Acetal resin, Polyoxymethylene)	[E]	Tradenames: *Celcon, Delrin.* Classified in commerce as a Thermoplastic Resin (Subpart D).
Polyamides (aliphatic)	D	
Dimer acid-based polyamide	D*	Tradenames: *Isonamid*
Epichlorohydrin-based polyamide	D*	
Nylon 6	D	Tradenames: *Capron, Dymetrol, Elvamide,*
Nylon 9	D*	*Ertalon, Felor, Fosta, Herox, Milvex,*
Nylon 11	D	*Moleculoy, Platamid, Texalon, Tynex,*
Nylon 12	D	*Versalon, Vydyne, Vylor, Wellamid,*
Nylon 66	D	*Well-blend, X-tal, Xylon.*
Nylon 6/12	D	
Poly*ar*amides (*ar* = aromatic)	D	Tradenames: *Kevlar*
Polyacrylic acid	[D]	See Acrylic acid. Regulated in OCPSF as a PLASTIC, but classified in commerce as an organic chemical.
Polybutadiene	[D]	OCPSF not applicable, if previously reported as an elastomer under SIC 2822 (414.11c).
Polybutenes (Polybutylene)	D	
Polybutene-1	D*	
Polybutenylsuccinic anhydride	D	
Polycarbonate	D	Tradenames: *Calibre, Lexan, Merlon.*
Polyester resins, saturated	D	
Polybutylene terephthalate (PBT) (polytetramethylene terephthalate)	D	Tradenames: *Celanx, Gafite, Gaftuf, Valox, VCT.*
Polyethylene terephthalate (PET)	D*	
PET as film	X*	OCPSF not applicable. Regulated by 40 CFR 463 (414.11d) and reported under SIC 3081. Tradenames: *Cronar, Mylar, Estar, Melinex, Scotchpak, Scotchpar.*
PET, as bottle-grade resins	D*	Tradenames: *Kodapak, Cleartuf.*
PET, as plastic bottles	X*	OCPSF not applicable. Regulated by 40 CFR 463 and reported under SIC 3085 (414.11d).
Polyalkylene isophthalate	D*	Tradenames: *Advaco*
Polyoxybenzoate	D	

Plastics (Resins)[a]	Subpart[b]	Remarks,Tradenames[c], Cross-references
Polyester resins, unsaturated	[D]	Classified in commerce as Thermosetting Resins (Subpart E). Tradenames: *Alpolit, Aropol, Astroloy, Atlac, AZ Rez, CoRezyn, Cypor, Derakane, Dion, Dypol, Fostercast, Genpol, GlidpolGlykon, Isolite, Koplac, MR/Marco, Multron, Pedigree, Pleogen, Polylite, Polytool, Selectron, Silmar, Stypol, Synolite, Tere-cast, Usslaminac, Valbond, Valglas, Vibramix, Vibrin.*
Polyether ether ketones (PEEK)	D**	
Polyethylene	D	Tradenames: *Alathon, Bakelite, Dylan, El Rey,*
Polyethylene, high density (HDPE)	D	*Eltex, Ethron, Fortiflex, Hex One, Hi-fax,*
Polyethylene, low density (LDPE)	D	*Hostalen, Lupolen, Marlex, Microthen, 1900,*
Polyethylene, ultra-high MW	D*	*Norchem, Paxon, Petrothene, Poly-Eth,*
Chlorinated polyethylene	D	*Poly-The, Pow'r-pak.*
Polyethylene Wax (low Molecular Wt.)	D	
Polyethylene wax (low MW, emulsion)	[D]	OCPSF not applicable, if formulated as a floor wax and previously reported under SIC 2842.
Polyethylene scrap	D	
Compounded Polyethylene resins:		
From resins produced in same plant	D	
From purchased resins	X*	OCPSF not applicable. Regulated by 40 CFR 463 (414.11d) and reported under SIC 3087.
Polyethylene copolymers	D	
Ethylene + Acrylic acid	D*	
Ethylene + Ethyl acrylate (EEA)	D	
Ethylene + Maleic anhydride (EMA)	D*	
Ethylene + Methacrylic acid	D*	
Ethylene + Vinyl acetate	D	Tradenames: *Acralen*
Ethylene + Vinyl chloride	D	
Polyimides (polyphthalimides)	D	
Polyimide	D	Tradenames: *Kapton, MLII, Polyimide 2080, Pyre-ML1, Pyre, Ultratherm, Vespel, Xu218, Xu218HP.*
Polyimide-foam	X*	Classify as SIC 3086: Foamed plastics.
Polyamide-imide	D*	Tradenames: *Al Polymer, A1600 Series, Torlon, Tritherm, XWE-960A.*
Polyether-imide	D*	Tradenames: *Ultem*
Polyimides	[D]	Classified in commerce as Thermosetting resins (Subpart E).
Polyimide	E*	Tradenames: *RI-7271, Skybond 700, Skybond, RI-7271, Thermid.*
Polyester-imide	E*	Tradenames: *Imidex, Teritherm, Isomid.*
Polyester-amide-imide	E*	Tradenames: *Enamel Omega.*

Plastics (Resins)[a]	Subpart[b]	Remarks,Tradenames[c], Cross-references
Polyisobutylene	D*	
Poly(alpha)Olefins	D	
Polyphenylene oxide (PPO)	D*	Tradenames: *Noryl*
Polydimethyl-o-phenol	D*	
Polyphenylene sulfide	D*	
Polypropylene (PP) resins	D	Tradenames: *A-fax, Alprodur, Avi-sun, Dypro, ElRex, Fortilene, Hercocel, Hostalen, LeRexene, Luparen, Moplen, Orlane, Olefil, Oleflo, Oleflow, Oleform, Olemer, Oletemp, Olex, Plasti-Glas, Poly-pro, Pow'r-pak, Procon, Pro-fax, Profil.*
Polystyrene (PS)	D	
Polystyrene, crystal	D	Tradenames: *Bipak, Cerex, Dylene, Evenglo,*
Polystyrene, expandable	D	*E-Z Flow, Forar, Fostafoam, Fostarene, Fosta Tuf-Flex, Jet Flow, Lustrex, Pelaspan, Pelaspan-Pac, Polyfibre, Polytone, Pow'r-pak, Styron, Styropor, Styrospan, Styrotherm, Superdense, Superflex, Superflow, Verelite.*
Polystyrene copolymers	D	
Styrene + Acrylonitrile (SAN)	D	See ABS resins.
Styrene + Acrylic (latex)	D	
Styrene + Acrylate ester (latex)	D*	
Styrene + Allyl alcohol	D*	
Styrene + Butadiene resins	D	
Styrene + [<50%]Butadiene (impact)	D	Tradenames: *K-Resin*
Styrene + [>50%]Butadiene (latex)	X*	SBR elastomer. OCPSF not applicable. Regulated by 40 CFR 419 (414.11d) and reported under SIC 2822.
Styrene + Divinylbenzene	D	
Styrene + Methylmethacrylate	D	
Styrenesulfonate + Maleic anhydride	D	
Polystyrene terpolymers	D	
Styrene + Acrylonitrile + Acrylate ester	D	
Styrene + Butadiene + Vinyltoluene	D	
Styrene + Two Methacrylate esters	D	
Styrene + Butadiene + Methyl methacrylate	D*	
Polysulfone resins	D	
Polysulfone	D	Tradenames: *Udel*
Polyarylsulfone	D*	Tradenames: *Astrel 360*
Polyethersulfone	D*	Tradenames: *Victrex*
Polyphenylsulfone	D*	Tradenames: *Radel*

Plastics (Resins)[a]	Subpart[b]	Remarks,Tradenames[c], Cross-references
Polyurethane prepolymers [d]	E	
Polyurethane resins [d]	E	
Polyurethane moulding resins	E*	
Polyurethane foams (cellular)	X*	OCPSF not applicable. Regulated by 40 CFR 463 and reported under SIC 3086 (414.11d).
Polyurethane surface coatings	[E*]	OCPSF not applicable, if previously reported under SIC 2851. Not regulated by 40 CFR 446.
Polyurethane adhesives, sealants	X*	OCPSF not applicable, if previously reported under SIC 2891 (414.11c).
Polyvinyl acetate resin (PVAc)	D	
Polyvinyl acetate copolymers	D	
Vinyl acetate + Acrylate ester	D	
Vinyl acetate + n-Butyl acrylate	D	
Vinyl acetate + Ethylene	D	
Vinyl acetate + 2-Ethylhexyl acrylate	D	
Vinyl acetate + Methacrylate ester	D	
Vinyl acetate + Vinyl chloride	D	See Polyvinyl chloride copolymers.
Polyvinyl alcohol resins (PVA)	D	Tradenames: *Elvanol, Gelvatol, Vinol.*
Polyvinyl butyral resins (PVB)	D*	Tradenames: *Butacite, Butvar*
Polyvinyl chloride resins (PVC)	D	Tradenames: *Abson, Bakelite, Dacovin,*
Chlorinated PVC	D	*Exon, Genclor, Geon, Hostaphan, Intamix, Irvinil, Kohinoor, Luvitherm, Pliovic, Polytrend, Rucon, Vestolit, Vinuron, Vygen, Vxgen.*
Polyvinyl chloride copolymers:		
Vinyl chloride + Acrylate ester (latex)	D	
Vinyl chloride + Methacrylate ester	D	Tradenames: *Acrylivin*
Vinyl chloride + Ethylene	D	
Vinyl chloride + Vinylidene chloride	D	
Vinyl chloride + Vinyl acetate	D	See Polyvinyl acetate copolymers.
Polyvinylidene chloride	D	
Polyvinylidene chloride copolymers	D	
Polyvinyl ether + Maleic anhydride	D	See Methylvinyl ether copolymers.
Polyvinyl formal	D	
Polyvinylpyrrolidone copolymers	D	
1-Vinyl-2-pyrrolidone + Styrene	D*	
Polyvinyltoluene	D	
Polyvinyltoluene copolymers:	D*	
Vinyltoluene + Acrylate ester	D	
Vinyltoluene + Butadiene	D	
Vinyltoluene + Methacrylate ester	D	
Rosin resins, derivative	[D]	Classified in commerce as Thermosetting
Rosin resins, modified	[D]	Resins (Subpart E). See Alkyd resins.

Plastics (Resins)[a]	Subpart[b]	Remarks,Tradenames[c], Cross-references
SAN (Styrene + Acrylonitrile)	D	See ABS resins.
Silicone resins	[D]	Classified in commerce as Thermosetting Resins (Subpart E).
Silicone rubbers	[D]	OCPSF not applicable (414.11d). Regulated by 40 CFR 428.30 and reported under SIC 2822.
Triazone resins:		
Acetoguanamine-Formaldehyde	E*	
Benzoguanamine-Formaldehyde	E*	
Urea resins	E	Tradenames: Aerolite, Amres, Cascamite,
Urea-Formaldehyde (Methylol)	E	Casco-Resin, Catabox, Fabroz, Foundrez,
Urea-Melamine-Formaldehyde	E*	Fporka, Foundrez, Fporka, Kaurit, Polyria, Resamin, Resimene, Styplast, Syn-U-Tex, Uformite.
Vinyl polybutadiene	X*	OCPSF not applicable (414.11d). Regulated by 40 CFR 428.30 and reported under SIC 2822.
Vinyl resins (unspecified)	D*	
Vinyltoluene resins	D	See Polyvinyltoluene copolymers

Explanatory Notes and Footnotes for Table 2-6

Footnotes:

a. Listing of Plastics (Resins) adapted from:
(1) Tables III and IV in Vol. II, Appendix III-A, Final Development Document for Effluent Limitations Guidelines and Standards for the Organic Chemicals, Plastics and Synthetic Fibers. EPA 440/1-87/009, October 1987.
(2) OCPSF Product/Process File compiled by the Engineering & Analysis (formerly Industrial Technology) Division of EPA's Office of Science & Technology (formerly Water Regulations & Standards), 1976-1983.
(3) *SRI Directory of Chemical Producers*, 1986 Edition, pp. 908-934.

b. Subpart notations:
D = Subpart D, Thermoplastic Resins, 40 CFR Part 414.40.
E = Subpart E, Thermosetting Resins, 40 CFR Part 414.50.

[ ] = Indicates a change in the status of a product since promulgation of the OCPSF regulation. These include changes in product classification prompted by published amendments to the OCPSF regulation, and corrections for errors in the listings of products in Table V, VI or VII of the OCPSF Development Document.

X = OCPSF regulation is not applicable to the product.

* = The product was *not listed* in Table III or IV in the OCPSF Development Document, or in FR 52, Nov. 5, l987, pp. 42572-42574. These additional products were selected from those shown in the 1986 *SRI Directory of Chemical Producers*.

Explanatory notes and footnotes for Table 2-6 (continued)

Subpart notations for products which are *not listed* in the OCPSF Dev. Document.

D* = Neither Table III or IV of the OCPSF Development Document, Vol. II, Appendix III-A, nor the Federal Register notice for the final regulation (52 FR 52, November 5, 1987) provide a complete listing of plastic products that may be subject to Part 414. Additional products that may be subject to Part 414 were identified from those shown in the 1986 *SRI Directory of Chemical Producers*. Such products are implied as OCPSF by belonging to a "product group" that was listed.

D** = Indicates the appropriate Subpart for a plastic product not specifically identified in either Table III or IV (cited above) that *may* be classified within a "product group" that was listed. Such products are implied as OCPSF by belonging to a "product group" that was listed in Table III or IV.

c. Tradenames taken from:
(1) 1986 *SRI Directory of Chemical Producers*.
(2) *Facts and Figures of the Plastics Industry*, 1979 Edition, The Society of the Plastics Industry, 355 Lexington Ave., New York, NY.

d. Polyurethanes
Since water must be rigorously excluded from the process, the formation of polyurethane resins or prepolymers from diisocyanates and polyols produces no wastewater directly. An indirect source of wastewater is blowdown from caustic scrubbers, which capture isocyanates vented from polyurethane processes.

ORGANIC CHEMICALS

Table 2-7. Commodity Organic Chemicals — Subpart F

Organic Chemicals	*CAS Number
Acetaldehyde	75-07-0
Acetic acid (glacial)	64-19-7
Acetic anhydride	108-24-7
Acetone	67-64-1
Acrylonitrile	107-13-1
Adipic acid	124-04-9
Benzene	1076-43-3
Butadiene	106-99-0
Butylenes, mixed	68477-42-9
Cumene	98-82-8
Cyclohexane	110-82-7
Dimethyl terephthalate (DMT)	120-61-6
Ethylbenzene	100-41-4
Ethylene	74-85-1
Ethylene dichloride (1,2-Dichloroethane)	107-06-2
Ethylene glycol	107-21-1
Ethylene oxide	75-21-8
Formaldehyde (Formalin)	50-00-0
Isopropanol (Isopropyl alcohol)	67-63-0
Methanol	67-56-1
Phenol	108-95-2
Pitches (from coal tar)	6599-6-93-2
Polypropylene glycol (PPG)	25322-69-4
Propylene	115-07-1
Propylene oxide	75-56-9
Pyrolysis gasoline	68606-10-0
Styrene	100-42-5
Terephthalic acid (TPA)	100-21-0
Toluene	108-88-3
Vinyl acetate	108-05-4
Vinyl chloride (1-Chloroethene)	75-01-4
Xylenes, mixed	1330-20-7
m-Xylene, crude (mixed with p-Xylene)	108-38-3
o-Xylene	95-47-6
p-Xylene	106-42-3

* CAS = Chemical Abstract Service

Table 2-8. Bulk Organic Chemicals - Subpart G

Organic Chemicals	CAS Number
Acetates (Acetic acid esters)	
n-Butyl acetate	123-86-4
Isobutyl acetate	110-19-0
Isopropyl acetate	108-21-4
n-Propyl acetate	109-60-4
Acetone cyanohydrin	75-86-5
Acetylene	74-86-2
ACIDS:	
Acrylic acid	79-10-7
Benzoic acid	65-85-0
n-Butyric acid	107-92-6
Butyric acid anhydride	106-31-0
Cyanuric acid	108-80-5
Dimer acid (Dilinoleic acid)	6144-28-1
Ethylenediaminetetraacetic acid (EDTA)	60-00-4
Isophthalic acid	121-91-5
Metanilic acid	121-47-1
Methacrylic acid	79-41-4
2-Naphthalenesulfonic acid	120-18-3
Nitrilotriacetic acid (NTA)	139-13-9
Oxalic acid	144-62-7
Phthalic acid	88-99-3
Propionic (Propanoic) acid	79-09-4
Salicylic acid	69-72-7
Trimellitic acid	528-44-9
Acrylates (Acrylic acid esters)	
Ethyl acrylate	140-88-5
2-Ethylhexyl acrylate	103-11-7
Methyl acrylate	96-33-3
Adiponitrile (1,4-Dicyanobutane)	111-69-3
ALCOHOLS:	
n-Butanol (n-Butyl alcohol)	71-36-3
n-Decanol (n-Decyl alcohol)	112-30-1
Diacetone alcohol	123-42-2
1-Dodecanol (Lauryl alcohol)	112-53-8
Ethanol (Ethyl alcohol, “synthetic” only)	64-17-5
2-Ethylhexanol	104-76-7
Isobutanol (Isobutyl alcohol)	78-83-1
n-Propanol (n-Propyl alcohol)	71-23-8
ALDEHYDES:	
n-Butyraldehyde	123-72-8
2-Ethylbutyraldehyde	97-96-1
2-Ethylhexanal (2-Ethylhexaldehyde)	123-05-7

Table 2-8. Organic Chemicals - Subpart G (continued)

Organic Chemicals	CAS Number
ALDEHYDES (continued):	
Isobutyraldehyde	78-84-2
Propionaldehyde	123-38-6
Alkylates (Alkylbenzenes):	
Dodecylbenzene (branched,"hard")	123-01-3
Dodecylbenzene (linear,"soft")	123-01-3
Alkylphenols, mixed	*
p-tert-Butylphenol	98-54-4
p-Dodecylphenol	104-43-8
Nonylphenol	25154-52-3
Allyl chloride	107-05-1
AMINES:	
n-Butylamine	109-73-9
sec-Butylamine	513-49-5
tert-Butylamine	75-64-9
Dimethylamine	124-40-3
Diphenylamine (N-Phenylaniline)	122-39-4
Ethylamine	75-04-7
Ethylene diamine	107-15-3
Hexamethylenediamine (1,6-Hexanediamine)	124-09-4
Isopropylamine	75-31-0
Melamine	108-78-1
Methylamine	74-89-5
o-Phenylenediamine	95-54-5
Toluene diamines (Tolylene diamines, mixed isomers)	25376-45-8
Trimethylamine	75-50-3
Aniline:	62-53-3
N,N-Diethyl*aniline*	91-66-7
2,6-Dimethyl*aniline*	87-62-7
4-(N-Hydroxyethylethylamino)-2-hydroxyethyl *aniline*	*
4,4'-Methylenebis(di*aniline*) (MDA)	101-77-9
Methylene di*aniline* (MDA)	101-77-9
4,4'-Methylenebis(N,N-dimethyl*aniline*)	101-61-1
Nitro*aniline*s, mixed	*
Polymeric MDA (oligomers)	*
Benzoic acid	65-85-0
m-Amino*benzoic* acid	99-05-8
p-Amino*benzoic* acid	150-13-0
m-Benzenedisulfonic acid, diSodium	831-59-4
Benzyl chloride	100-44-7
Bisphenol A	80-05-7

* CAS Number not readily identified

Table 2-8. Organic Chemicals - Subpart G (continued)

Organic Chemicals	CAS Number
BTX (Benzene, Toluene, Xylenes)	68475-70-7
n-Butane	106-97-8
Butenes:	
1-Butene	106-98-9
2-Butene (*cis*)	590-18-1
2-Butene (*trans*)	624-64-6
p-tert-Butylphenol	98-54-4
Caprolactam	105-60-2
Carbon disulfide	75-15-0
Carbon tetrachloride	56-23-5
Cellulose ethers:	
Carboxymethylcellulose, Sodium	9004-32-4
Carboxymethyl hydroxyethyl cellulose, Sodium	*
CFC's (Chlorofluorocarbons):	
Chlorodifluoromethane (HCFC-22)	75-46-6
Fluorotrichloromethane (CFC-11)	75-69-4
Chlorinated paraffins (wax), 35-64% Chlorine	63449-39-8
Chlorobenzene	108-90-7
Chlorobenzenes, mixed	25321-22-6
Chloroethanes:	
Chloroethane (Ethyl chloride)	75-00-3
1,1-Dichloroethane (Methylene chloride)	75-34-3
1,1,1-Trichloroethane (Methylchloroform)	71-55-6
1,1,2-Trichloroethane (beta-Trichloroethane)	79-00-5
Chloroethylenes:	
1,1-Dichloroethylene (Vinylidene chloride)	75-35-4
Tetrachloroethylene (Perchloroethylene)	127-18-4
Trichloroethylene (TCE)	79-01-6
Chlorophenols:	
6-Chloro-m-cresol (2-Chloro-5-methyl phenol)	615-74-7
2,4-Dichlorophenol	120-83-2
Chloroform (Trichloromethane)	67-66-3
Chloroprene (2-Chloro-1,3-butadiene)	126-99-8
Coal tar products:	
Creosote oil (low boiling)	70321-80-1
Naphthalene	91-20-3
Pitches/Tars (refined, road materials)	65996-93-2
Cresylic acid (mixture of o-, m-, p-Cresol)	1319-77-3
Cresols, mixed (from coal tar condensate)	1319-77-3

* CAS Number not readily identified

Table 2-8. Organic Chemicals - Subpart G (continued)

Organic Chemicals	CAS Number
Cresols (from hydrocarbon processes):	
Cresols, mixed (Cresylic acids)	1319-77-3
m-Cresol	108-39-4
o-Cresol	95-48-7
p-Cresol	106-44-5
Cumene hydroperoxide	80-15-9
Cyanogen (Ethanedinitrile)	460-19-5
Cyanogen chloride	506-77-4
Cyanuric acid	108-80-5
Cyanuric chloride	108-77-0
Cyclohexanol	108-93-0
Cyclohexanone	108-94-1
Cyclohexanol-Cyclohexanone (mixture)	*
Cyclohexene	10-83-8
Diethylene glycol ethers:	
Diethylene glycol, diethyl ether (bis[2-Ethoxyethyl] ether)	112-36-7
Diethylene glycol, dimethyl ether (bis[2-Methoxyethyl] ether)	111-96-6
Diethylene glycol, monoethyl ether (2-[2-Ethoxyethoxy] ethanol)	111-90-0
Diethylene glycol, monomethyl ether (2-[2-Methoxyethoxy] ethanol)	111-77-3
Dimer acid (Dilinoleic acid)	6144-28-1
Dimethylformamide (DMF)	68-12-2
Dinitrotoluenes, mixed	104-38-8
2,4-Dinitrotoluene	121-14-2
2,6-Dinitrotoluene	606-20-2
Diols:	
1,4-Butanediol	74829-49-5
2,2,4-Trimethyl-1,3-pentanediol	144-19-4
N,N-Dimethylformamide	68-12-2
1,4-Dioxane	123-91-1
p-Dodecylphenol	104-38-8
Epichlorohydrin	106-89-8
Ethane	74-84-0
Ethanolamines:	
Monoethanolamine	141-43-5
Diethanolamine	111-42-2
ETHERS:	
Diethyl ether	60-29-7
Methyl-tert-butyl ether (MTBE)	1634-04-4

* CAS Number not readily identified

Table 2-8. Organic Chemicals - Subpart G (continued)

Organic Chemicals	CAS Number
Ethylene glycol ethers:	
Ethylene glycol, dimethyl ether (1,2-Dimethoxyethane)	110-71-4
Ethylene glycol, monobutyl ether (2-Butoxyethanol)	111-76-2
Ethylene glycol, monoethyl ether (2-Ethoxyethanol)	110-80-5
Ethylene glycol, monomethyl ether (2-Methoxyethanol)	109-86-4
Ethylene glycol, monophenyl ether (2-Phenoxyethanol)	122-99-6
Fatty nitriles	68514-68-1
Formate, Sodium (Formic acid salt)	23102-86-5
GLYCOLS:	
Diethylene glycol	111-46-6
Dipropylene glycol	110-98-5
Polybutylene (Polyoxybutylene) glycol	5190-06-1
Polyethylene glycol (PEG) (Polyether polyols)	25322-68-3
Propylene glycol (1,2-Propanediol)	4254-15-3
Glyoxal	107-22-2
n-Hexane	110-54-3
Hydrocarbons C-5 (concentrate)	68476-43-7
Hydrocarbons C-9 (concentrate) C7 to C9	68920-06-9
Isobutylene (2-Methylpropene)	115-11-7
Isocyanates:	
Methylenebis(4-phenyl*isocyanate*) (MDI)	101-68-8
Methylenediphenyldi*isocyanate* (MDI)	101-68-8
Polymethylene polyphenylene*isocyanate* (PAPI)	9016-87-9
PAPI (polymeric MDI)	9016-87-9
Tolylene di*isocyanate*s (TDI), mixed	26471-62-5
2,4-Tolylene di*isocyanate*	584-84-9
2,6-Tolylene di*isocyanate*	91-08-7
Isophorone	78-59-1
Isoprene (2-Methyl-1,3-butadiene)	78-79-5
KETONES:	
Methyl ethyl ketone (MEK)	78-93-3
Methyl isobutyl ketone (MIBK)	108-10-1

Table 2-8. Organic Chemicals - Subpart G (continued)

Organic Chemicals	CAS Number
Maleic anhydride	108-31-6
Melamine	108-78-1
Methane	74-82-8
Methyl chloride (Chloromethane)	74-87-3
Methylenebis-	
4,4'-Methylenebis(dianiline)	101-77-9
Methylene dianiline (MDA)	101-77-9
Polymeric methylene dianiline	25214-70-4
4,4'-Methylene bis(N,N-dimethylaniline)	101-61-1
Methylene chloride (Dichloromethane)	75-09-2
Methyl methacrylate (MMA)	80-62-6
a-Methylstyrene	98-83-9
Naphtha solvent (made in chemical plant)	8052-41-3
Naphthalene	91-20-3
2-Naphthalenesulfonic acid (beta)	120-18-3
Nitrobenzene	98-95-3
p-Nitrophenol	100-02-7
Nitrotoluenes:	
2,4-Dinitrotoluene	121-14-2
2,6-Dinitrotoluene	606-20-2
Dinitrotoluenes (mixed isomers)	25321-14-6
o-Nitrotoluene	88-72-2
p-Nitrotoluene	99-99-0
Nonylphenol	25154-52-3
Nylon salt	*
Olefins (alpha)	64743-02-8
Organo-Tin compounds	*
Oxo Process Chemicals:	
n-Butyraldehyde	123-72-8
n-Butanol	71-36-3
2-Ethylhexanol	104-76-7
Isobutanol (2-Methyl-1-propanol)	78-83-1
Isobutyraldehyde	78-84-2
Propionic acid (Propanoic acid)	79-09-4

Table 2-8. Organic Chemicals - Subpart G (continued)

Organic Chemicals	CAS Number
Oxo Process Chemicals (continued):	
n-Propanol	71-23-8
Propionaldehyde	123-38-6
n-Paraffins (C-9 to C-16)	64771-72-8
Pentaerythritol	115-77-5
n-Pentane	109-66-0
1-Pentene	109-67-1
Pentenes, mixed	25377-72-4
Perchloroethylene (Tetrachloroethylene)	127-18-4
o-Phenylenediamine	95-54-5
Phosgene	75-44-5
Phthalates:	
Butyl, Octyl phthalate	84-78-6
Di-n-butyl phthalate	84-74-2
Di(2-ethylhexyl) phthalate	117-81-7
Diisobutyl phthalate	84-69-5
Diisodecyl phthalate	26761-40-0
Diiso-octyl phthalate	117-84-0
Dimethyl phthalate	31-11-3
Ditridecyl phthalate	85-44-9
Phthalic anhydride	85-44-9
Pine oil, synthetic (Terpineols)	8002-09-3
Propane	74-98-6
Propylene dichloride (1,2-Dichloropropane)	78-87-5
Sorbitol	50-70-4
Stearate(wax), Calcium	2223-93-0
Tetraethyl Lead (TEL)	78-00-2
Tetrahydrofuran (THF)	109-99-9
1,2,3,4-Tetrahydronaphthalene (Tetralin)	119-64-2
1-Tetralol/1-Tetralone mixture	*
1,2,3,4-Tetrahydro-1-naphthol (1-Tetralol)	529-33-9
1-Tetralone (3,4-Dihydro-2[2H]-naphthalenone)	529-34-0
Tetramethyl Lead (TML)	75-74-1
Toluenediamines (Tolylenediamines)	25376-45-8
2,4-Tolylenediamine (2,4-Diaminotoluene)	95-80-7
Tri-*p*-cresyl phosphate (Tritolylphosphate)	1330-78-5
Vinylidene chloride (1,1-Dichloroethene)	75-35-4

* CAS Number not readily identified

Specialty Organic Chemicals - Subpart H

Individual and groups of organic chemicals subject to the effluent limitations for Subpart H are not listed in 40 CFR 414. However, a list of such organic chemicals may be found in the OCPSF Development Document, Volume II, Appendix II-A, Table VII.

The specialty organic chemicals listed in the OCPSF Development Document, as well as other organic chemicals appropriate for Subpart H, have been integrated into the combined list of organic chemical products tabulated in the Appendix of this guidance. The combined list in the Appendix includes organic chemicals applicable to Subparts F, G, and H.

APPENDIX

An Introduction to Organic Chemical Nomenclature

OCPSF plants name organic chemical products in several ways: Common, Systematic, Acronym, Generic, etc. Some examples follow.

Common	Systematic	Acronym	Generic
Acetaldehyde	Ethanal		Aldehyde
Acetic acid	Ethanoic acid		Aliphatic carboxylic acid
Acetone (Dimethyl ketone)	2-Propanone	DMK	Ketone
Benzoic acid	Benzenecarboxylic acid		Aromatic carboxylic acid
Cresol (Cresylic acid)	Hydroxytoluene		Phenolic
Dimer acid (Dilinoleic acid)			Fatty acid
Ethylene	Ethene		Olefin
Ethylene dichloride	1,2-Dichloroethane	EDC	Chloroalkane
Ethylene glycol monoethyl ether	2-Ethoxyethanol		Glycol ether
Methyl ethyl ketone	2-Butanone	MEK	Ketone
Phenol (Tar acid)	Hydroxybenzene		Phenolic
Phthalic acid	Benzene-1,2-dicarboxylic acid		Aromatic dicarboxylic acid
Vinylidene chloride	1,1-Dichloroethene		Chloroalkene

A user would presumably experience more difficulty in identifying and classifying organic chemical OCPSF products than fiber or plastic products, because of the sheer number of entries and complexity of the names. For this reason, an innovative effort was made to compile and order the combined list of organic chemical OCPSF products in such a way that users trying to find a product need only key on its chemical name. Entries were avoided that would require the user to have a knowledge of the structure or nomenclature of organic chemicals. Entries on the list were ordered by a product's common chemical name and variations of it, wherein the name is repeated within the names of other products. By simply looking at the chemical name, or some part of it, the user can find the product in one or more places (by cross-reference) in the combined list.

Criteria Used to Compile and Order the Combined List of Organic Chemicals

1. Products are listed in alphabetical order, using the common name. In determining order, locants (numbers) and other designations in the product name were not considered. For example, the 2- of 2-Butene was ignored, as was the *tert*- of *tert*-Butyl alcohol. Alternate names frequently used are shown parenthetically immediately after the common name.

2. Product Name Groups

    a. Products that have the name of a parent chemical incorported as a prefix or suffix within their respective names are grouped with the parent chemical. For example, listed under Benzene are: *Benzene*sulfonic acid and Divinyl*benzene*. In referring to this name group, the index shows a line entry of : Benzene, Benzene-, -benzene. To find this name group in the index, the user must recognize the parent name "benzene" within the product name.

    b. Products sharing a common suffix within their names were grouped together. For example, listed under Acetates are: Ethyl *acetate* and Vinyl *acetate*. In referring to this name group, the index shows a line entry of: -acetate. To find this name group in the index, the user must recognize the suffix "acetate" within the product name.

    c. Products sharing a common generic suffix in their names were grouped together. For example, listed under ACIDS, ALCOHOLS, and ALDEHYDES respectively are: Acetic *acid*, Ethyl *alcohol*, and Benz*aldehyde*. To find these name groups in the index, the user must recognize the generic suffixes "acid", "alcohol," and "aldehyde" within the product names.

    d. Products were also grouped together under non-specific commercial names, such as Coal Tar Products, Flavors and Fragrances (Aroma), CFC's, etc.

3. All Subpart F and Subpart G products were listed individually, as well as being referenced to one or more name groups. Generally, Subpart H products were listed under name groups. Only Subpart H products that do not fit under a name group were listed individually.

Index to Organic Chemical Products Classified in Subparts F,G,H

Combined List of OCPSF Organic Chemical Products

Organic chemical product[a]	Subpart[b]	Remarks and Cross-references
Acetal (1,1-Diethoxyethane)	H	
Acetaldehyde	**F**	See ALDEHYDES
Acetaldol (3-Hydroxybutyraldehyde)	H	See ALDEHYDES
Acetamides	H*	
Acetamidothymol (2-Isopropyl-5-methyl-6-*acetamido*phenol)	H	
N-methyl*acetamide*	H*	
Acetanilide	H	
Acetanilides	H	
p-Amino*acetanilide*	H	
p-Methyl*acetanilide* (p-Acetotoluidide)	H*	
p-Nitro*acetanilide*	H	
Acetates (acetic acid esters):		
Amyl acetates	H	
Amyl acetate	H*	
Iso*amyl* (isopentyl) acetate	H	See Flavors & Fragrances
Benzyl acetate	H	See Flavors & Fragrances
2-Butoxyethyl acetate	H	See GLYCOL Esters
2-(2-butoxyethoxy) ethyl acetate	H	See GLYCOL Esters
n-Butyl acetate	**G**	
tert-Butyl per*acetate*	H*	See Peroxyesters
Diazoacetic ester (Ethyl diazo*acetate*)	H	
Dodecylguanidine acetate	H	See Guanidines
2-(2-ethoxyethoxy) ethyl acetate	H	See GLYCOL Esters
Ethyl acetate	H	
Ethyl bromo*acetate*	H*	
Ethyl oxalo*acetate*, sodium (Ketosuccinic acid, ethyl ester, salt)	H	
Ethylene glycol di*acetate*s	H	See GLYCOL Esters
2-Ethylhexyl acetate	H*	
Glyceryl tri*acetate* (Triacetin)	H*	
Isobutyl acetate	**G**	
Isopropyl acetate	**G**	
Methallylidene di*acetate* (Methacrolein di*acetate*)	H	
2-Methoxyethyl acetate	H	See GLYCOL Esters
Methyl acetate	H	
n-Propyl acetate	**G**	
Propylene glycol ether acetates	H*	See GLYCOL Esters
Triethylene glycol di*acetate*	H*	See GLYCOL Esters

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Acetates, esters (continued)		
Vinyl acetate	**F**	
Acetates, salts: Calcium, Chromium, Cobalt, Copper, Lead, Magnesium, Manganese, Sodium, Zinc.	H	
Ammonium acetate	H*	
Sodium fluoro*acetate*	H	
Acetic acid	**F**	See ACIDS Monocarboxylic
Chloro*acetic* acid (MCA)	H	
Cyano*acetic* acid	H	
Dehydro*acetic* acid (Methylacetopyranone)	H*	
Iminodi*acetic* acid (Diglycine)	H	
Nitrilotri*acetic* acid (NTA)	**G**	See Chelating agents
Per*acetic* acid	H	See Hydroperoxides
Phenoxy*acetic* acid	H*	
Phenyl*acetic* acid and esters	H*	See Flavors & Fragrances
Thio*acetic* acid	H*	
Thiophene*acetic* acid	H	
Trichloro*acetic* acid	H	
Trifluoro*acetic* acid	H	
Acetic anhydride	**F**	
Trifluoro*acetic anhydride*	H*	
Acetoacetanilide	H	
Acetoacetanilides	H	
Acetoacet-*o*-anisidine (*o*-Methoxy*acetoacetanilide*)	H*	
Acetoacet-*o*-toluidide	H*	
Acetoacet-*m*-xylidide	H*	
Acetoacetates:		
Ethyl acetoacetate (Acetoacetic ester)	H	
Methyl acetoacetate	H	
Acetone	**F**	See KETONES
Acetone cyanohydrin	**G**	
Chloro*acetone*	H	
Hexafluoro*acetone*	H*	
Acetonitrile	H	See Nitriles
Acetophenone	H	See KETONES, Flavors & Fragrances
Acetylacetone (2,4-Pentanedione)	H**	See KETONES
Acetylacetonates, metal salts: (Chromium, Cobalt, Copper, Zinc)	H**	
Acetyl chloride	H	
Dichloro*acetyl* chloride	H*	
Acetylene	**G**	
Acetylenic alcohols	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Acetylenic alcohols (continued)		
3-Methylbut*yn*-3-*ol*	H	See ALCOHOLS
Methylpent*ynol* (3-Methyl-1-pentyn-3-ol)	H	See ALCOHOLS
Propargyl alcohol (2-Prop*yn*-1-*ol*)	H*	See ALCOHOLS
Acetylenic diols	H	
1,4-But*ynediol* (2-Butyne-1,4-diol)	H	See Diols
ACIDS (aliphatic **mono**carboxylic)		
Acetic acid	**F**	
Acrylic acid	**G**	
Butyric acid	**G**	
Chloroacetic acid	H	See Acetic acid
Crotonic acid (*trans*-2-Butenoic acid)	H	
Decanoic acid (Capric acid)	H*	
Dodecanoic acid (Lauric acid)	H	
Ethylbutyric acid	H	
2-Ethylhexanoic acid	H	See Oxo Acids
2-Ethylhexanoates, metal salts: (Chromium, Cobalt, Lead, Tin, Zinc)	H**	
Formic acid	H	
Gallic acid (3,4,5-trihydroxybenzoic acid)	H*	
Heptanoic acid (Enanthic acid)	H*	See Oxo Acids
Hexanoic acid (Caproic acid)	H	
Isobutyric acid	H*	
Metanilic acid	**G**	
Methacrylic acid	**G**	
Neodecanoic acid	H*	See Oxo Acids
Neoheptanoic acid	H*	See Oxo Acids
Neopentanoic acid (Pivalic acid)	H	See Oxo Acids
Octanoic acid (Caprylic acid)	H*	
Pelargonic acid (Nonanoic acid)	H*	
Propanoic acid (Propionic acid)	**G**	See Oxo Acids
2-Hydroxy*propionic* acid (Lactic acid)	H	
Sorbic acid (2,4-Hexadienoic acid)	H	
n-Valeric acid (Pentanoic acid)	H*	See Oxo Acids
ACIDS (aliphatic **di**carboxylic)		
Adipic acid	**F**	
Azelaic acid	H*	
Decanedioic acid (Sebacic acid)	H*	
Fumaric acid	H	
Glutaric acid	H*	
Maleic acid	H	
Malic acid (Hydroxysuccinic acid)	H	
Malonic acid (Propanedioic acid)	H*	
Oxalic acid	**G**	
Succinic acid	H*	
Keto*succinic* acid (Oxaloacetic acid)	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Acrolein	H	
Meth*acrolein*	H	
Acrylamide	H	
N-Methylol*acrylamide*	H*	
Poly*acrylamide*	H*	
Poly*acrylamide*-Acrylic acid (copolymer)	H*	
Acrylates (acrylic acid esters):		
n-Butyl acrylate	H	
Diethylaminoethyl acrylate	H*	
Dodecenyl acrylate (Lauryl acrylate)	H*	
Ethyl acrylate	**G***	
Ethylene glycol diacrylates	H*	See GLYCOL Esters
2-Ethylhexyl acrylate	**G***	
Hydroxyethyl acrylate	H*	
Hydroxypropyl acrylate	H*	
Isobornyl acrylate	H*	
Isobutyl acrylate	H*	
Isodecyl acrylate	H*	
Methoxyethyl acrylate	H*	
Methyl acrylate	**G***	
Methyl 2-cyano*acrylate*	H	Tradename: *Mecrylate*
Pentaerythritol acrylates	H*	
Phenoxyethyl acrylate	H*	
Propylene glycol di*acrylate*s	H*	See GLYCOL Esters
Tetraethylene glycol di*acrylate*	H*	
Tetrahydrofurfuryl acrylate	H*	
Tripropylene glycol di*acrylate*	H*	See GLYCOL Esters
Acrylic acid	**G**	
Poly*acrylic* acid	[H]	OCPSF has designated these two polymers as
Poly*acrylate*, sodium	[H*]	PLASTICS (Subpart D), but they are classified in commerce as an organic chemical.
Acrylonitrile	**F**	
Adipates (adipic acid esters)	H	Use: Plasticizers
Di(2-Ethylhexyl) adipate	H	
Diisodecyl adipate	H	
Diisopropyl adipate	H*	
Ditridecyl adipate	H	
n-Octyl, n-Decyl adipate	H	
Adipic acid	**F**	
Adiponitrile	**G**	
ALCOHOLS		
Amyl alcohols	H	
n-Amyl alcohol (1-pentanol)	H*	See Oxo Alcohols
tert-Amyl alcohol (2-Methyl-2-butanol)	H*	
Iso*amyl* alcohol (Isopentanol)	H	See Oxo Alcohols

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Benzyl alcohol	H	See Flavors & Fragrances
m-Phenoxy*benzyl* alcohol	H	
a-Methyl*benzyl* alcohol	H*	
Butyl alcohol (n-Butanol)	**G**	See Oxo Alcohols
n-Decanol (n-Decyl alcohol)	**G**	
Diacetone alcohol	**G**	
1-Dodecanol (Dodecyl alcohol)	**G***	
Ethyl alcohol (Ethanol, by fermentation)	X	OCPSF not applicable (414.11e)
Ethyl alcohol (Ethanol, by synthesis)	**G**	
2-Ethylhexanol (2-Ethylhexyl alcohol, C-8)	**G**	See Oxo Alcohols
Hexadecanol (Hexadecyl or Cetyl alcohol)	H	
n-Hexanol (n-Hexyl alcohol)	H*	
2-Hexanol (1-methyl	H*	See Oxo Alcohols
Isobutanol (Isobutyl alcohol)	**G**	See Oxo Alcohols
Isodecanol (Isodecyl alcohol)	H	See Oxo Alcohols
Isohexanol (Isohexyl alcohol)	H*	
Isononanol (Isononyl alcohol)	H*	See Oxo Alcohols
Iso-octanol (Iso-octyl alcohol)	H	See Oxo Alcohols
Isopentyl alcohol (Isoamyl alcohol)	H	See Oxo Alcohols
Isopropyl alcohol (Isopropanol)	**F**	
Lauryl alcohol (Dodecanol)	**G***	See 1-Dodecanol
3-Methylbutyn-3-ol	H	See Acetylenic alcohols
Methylpentynol	H	See Acetylenic alcohols
1-Octadecanol (Octadecyl alcohol)	H*	See Stearyl alcohol
n-Octanol (n-Octyl alcohol)	H*	See Flavors & Fragrances
Primary alcohols (C12 – C18)	->	Dodecanol, Tetradecanol, Hexadecanol, Octadecanol
Propargyl alcohol	H*	See Acetylenic alcohols
n-Propanol (n-Propyl alcohol)	**G**	
1-Tetradecanol (Myristyl alcohol)	H*	
1-Tridecanol (Tridecyl alcohol)	H*	See Oxo Alcohols
Tribromoneopentyl alcohol	H	
Alcohol Sulfates:		
Hexyl alcohol sulfate, sodium	[H]	Surface active agents. May be regulated by Part 417,
Lauryl alcohol sulfate, sodium	[H]	if reported under SIC 2843 (414.11c)
Octyl alcohol sulfate, sodium	[H]	Surface active agent.
ALDEHYDES		
Acetaldehyde	**F**	
Chloro*acetaldehyde*	H	
Trichloro*acetaldehyde* (Chloral)	H	
3-Hydroxy*acetaldehyde* (Acetaldol)	H	
Phenyl*acetaldehyde*, dimethylacetal	H	
Benzaldehyde	H	
o-Anisaldehyde (o-Methoxy*benzaldehyde*)	H*	See Flavors & Fragrances
m-Phenoxy*benzaldehyde*	H	
m-Bromo*benzaldehyde*	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Benzaldehydes (continued)		
Chloro*benzaldehyde*	H	
p-Dimethylamino*benzaldehyde*	H*	
n-Butyraldehyde	**G**	See Oxo Aldehydes
Crotonaldehyde (*trans*-2-Butenal)	H	
Cyclamen aldehyde	H	See Flavors & Fragrances
2-Ethylbutyraldehyde	**G**	
2-Ethylhexanal (2-Ethylhexaldehyde)	H*	See Oxo Aldehydes
Formaldehyde	**F**	Three commercial forms: Formalin (aq. 35-55% soln); Trioxane (cyclic trimer); Paraformaldehyde (polymeric)
Isobutyraldehyde	**G**	See Oxo Aldehydes
Propionaldehyde	**G**	See Oxo Aldehydes
Salicylaldehyde	H	See Flavors & Fragrances
n-Valeraldehyde	H	See Oxo Aldehydes
n-Alkanes	->	See Hydrocarbons
Alkoxyalkanols	->	See GLYCOL, monoethers
Alkylamines	->	See AMINES
Alkylates (alkylbenzenes):		
Dodecylbenzene (branched, "hard")	**G***	
Dodecylbenzene (linear, "soft")	**G***	
Alkylbenzenesulfonic acids, salts	[**G**]	Surface active agents. May be regulated by Part 417,
Dodecylbenzenesulfonate, Sodium	[H]	if reported under SIC 2843 (414.11c).
Alkylates (for gasoline)	X	A refinery product regulated by Part 419 and reported under SIC 2911. OCPSF not applicable (414.11c).
Alkyl bromides:		
Bromomethanes	H	See Methyl bromide, Dibromomethane, Bromoform
Butyl bromide (1-Bromobutane)	H*	
Ethyl bromide (1-Bromoethane)	H	
Alkylphenols, mixed	**G**	See Phenol
Allene (Propyne)	H	
Allyl chloride	**G**	
Allyl alcohol	H	
Allylnitrile	H	
Allylsulfonate, sodium	H**	
Alpha-olefins	->	See Olefins, alpha
AMIDES		
Acet*amide*	H	
N,N-Dimethyl*acetamide*	H*	
Fluoro*acetamide*	H	
Thio*acetamide*	H	
Aryl*amides*	H	See Benzamide
Benz*amide* (an arylamide)	H	
N,N-Diethanol stear*amide*	H	
N,N'-Ethylene bis(ole*amide*)	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
AMIDES (continued)		
N,N'-Ethylene bis(stear*amide*)	H	
Form*amide*	H	
N-Methyl*formamide*	H*	
N,N-Dimethyl*formamide* (DMF)	**G**	
Long-chain amides, N-ethoxysulfates	[H]	Surface active agent. May be regulated by Part 417, if reported under 2843 (414.11c).
Niacin*amide* (Nicotinic acid amide)	X	Medicinal chemical (Vitamin). Regulated by Part 439 and reported under SIC 2833 (414.11d).
Oxamide	H*	
Stear*amide*	H*	
AMINES		
Allyl*amine*	H	
n-Amyl*amine*	H	
Benzyl*amine*	H	
N,N-Dimethylbenzyl*amine*	H*	
N-Ethyl-N-phenyl benzyl*amine*	H	
N-Methylbenzyl*amine*	H*	
Biphenyl*amine*s (*Amino*biphenyls)	H	See Biphenyl
1,4-Butanedi*amine* (1,4-Di*amino*butane)	H*	
Butylamines:		
n-Butyl*amine*	**G**	
N-Ethyl-n-butyl*amine*	H*	
Di-n-butyl*amine*	H*	
sec-Butyl*amine*	**G**	
tert-Butyl*amine*	**G**	
Tri-n-butyl*amine*	H*	
Cyclohexyl*amine*	H	
N-Ethyl*cyclohexylamine*	H*	
N-Methyl*cyclohexylamine*	H*	
Cyclopropyl*amine*	H*	
Dicyclohexyl*amine*	H	
Diethyl*amine*	H	
Diethyl-2-chloroethyl amine (N-[2-chloroethyl] diethyl*amine*)	H	
Diisobutyl*amine*	H*	
Diisopropyl*amine*	H*	
N,N-Diisopropylethyl*amine*	H*	
Dimethyl*amine*	**G**	See Methylamines
Dimethylbutyl*amine*	H	
N,N-Dimethyl-1,3-propanedi*amine*	H*	
Diphenyl*amine* (N-Phenylaniline)	**G**	See Diphenylamine
Di-n-propyl*amine*	H*	
Dodecyl*amine*	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
AMINES (continued)		
Ethyl*amine*	**G**	
Ethylene di*amine*	**G**	See Ethyleneamines
Polyethylene poly*amine*s	H	See Ethyleneamines
2-Heptyl*amine* (2-*Amino*heptane)	H*	
1,6-Hexanedi*amine*	**G**	
Hexamethylenetetr*amine*	H	
n-Hexyl*amine*	H*	
Hydroxyl*amine*	H	
Isobutyl*amine*	H*	
4-Isopropoxydiphenyl*amine*	H	
Isopropyl*amine*	**G**	
Mechloreth*amine* (bis[2-chloroethyl]methyl*amine*)	H	
Mel*amine*	**G**	
Methyl*amine*	**G***	See Methylamines
N-Methylhydroxyl*amine* : HCl	H	
N-1-Naphthylethylenedi*amine* : 2HCl	H	
Nitr*amines* (Tetryl, RDX, HMX, NQ)	X	Explosives. Regulated by Part 457 and reported under SIC 2892 (414.11d).
Pentyl*amine* (Amyl*amine*)	H*	
Phenethyl*amine* (β-*Amino*ethylbenzene)	H*	
Phenylethyl*amine* (α-Methylbenzyl*amine*)	H*	
Phenylenedi*amine*	->	See Phenylenediamines
Phenylhydroxyl*amine*	H	
N-Phenyl-2-naphthyl*amine*	H	
n-Propyl*amine*	H	
Tetramethylenedi*amine*	H	
Toluene di*amine***s** (TDA)	**G**	See Tolylene diamines
Triallyl*amine*	H	
Triethyl*amine*	H	
Triethylenedi*amine*	H	
Trimethyl*amine*	**G**	See Methylamines
m-**Aminobenzoic** acid	**G**	See Benzoic acid
p-Aminobenzoic acid	**G**	See Benzoic acid
Aminobenzotrifluoride	H**	
2-**Aminoethanol** (Monoethanolamine)	**G**	See Ethanolamines
2-Aminoethyl hydrogen sulfate	H	
Aminophenols:		
o-, p-Aminophenol	H	
m-Dimethyl*aminophenol*	H	
N-stearoyl-p-*aminophenol*	H*	Used for rubber processing.
Ammonium salts (quaternary salts)	->	See Tetraalkylammonium salts.
Amyl chloride	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Aniline	**G**	
*Anilino*methanesulfonic acid	H*	
o-, *m*-, *p*-Chloro*aniline*	H	
3,4-Dichloroaniline	H	
N,N-Diethyl*aniline*	**G**	
2,6-Diethyl*aniline*	H*	
2,6-Dimethyl*aniline*	**G**	See Xylidine
N,N-Dimethyl*aniline*	H	
N,N-Dimethyl-4-nitroso*aniline*	H	
2,4-Dinitro*aniline*	H	Dye intermediate
N-Ethyl*aniline*	H*	
N,N-Ethylbenzyl*aniline* (N-Ethyl-N-phenylbenzylamine)	H*	
o-Ethyl*aniline* (o-Aminoethylbenzene)	H*	
4-Fluoro-3-nitro*aniline*	H	Dye intermediate
4-(N-Hydroxyethylethylamino)-2-hydroxyethyl *aniline*	**G**	
N-Methyl*aniline*	H	
p-(Phenylazo) *aniline*	H	
Nitro*aniline*s, mixed	**G**	See Nitroaniline
p-Nitro*aniline*	H	See Nitroaniline
o-, m-Nitro*aniline*	H*	See Nitroaniline
4,4'-Oxydi*aniline*	H*	
2,4,5-Trimethyl*aniline*	H	
Anilides:		
Malodi*anilide*	H	
Salicyl*anilide*	H	
Anisidine (o-, p-Methoxyaniline)	H	Dye intermediate
Di*anisidine* (di[methoxyphenyl]amine)	H	
*o-Anisidino*methanesulfonic acid	H*	
Anisole (Methoxybenzene)	H	Dye intermediate
o-, *p*-Nitro*anisole*	H	Dye intermediate
Anthranilic acid (o-Aminobenzoic acid)	H	See Benzoic Acid
N-phenyl*anthranilic* acid	H	
Anthraquinone	H	
1-Amino-2-bromo-4-hydroxy-*anthraquinone*	H	Dye intermediate
1,5-Dichloro*anthraquinone*	H*	Dye intermediate
Anthrones:		
16,17-Dihydroxyviol*anthrone* (Dihydroxydibenz*anthrone*)	H**	Pigment intermediate.
Arylesters	->	See Benzoates

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Aspirin (technical grade)	[H]	Amended classification [55 FR 42337 (Oct. 18, 1990)]
Aspirin (medicinal grade)	X	Medicinal chemical. See Salicylic acid. Reported under SIC 2833 and regulated by Part 439 (414.11d).
Azelaic acid	H*	See ACIDS, Dicarboxylic
Poly*azelaic* anhydride	H	
Azelates (azelaic acid esters):		
Di(2-ethylhexyl) azelate	H	Used as a plasticizer for plastic products.
Di(n-hexyl) azelate	H*	
Aziridine (Ethylenimine)	H*	
2-Methyl*aziridine*	H	
1-*Aziridine*ethanol (N-Hydroxyethyl- *aziridine*)	H	
Azobenzene (Diphenyldiazene)	H*	
4'-Amino*azobenzene*-4-sulfonic acid	H*	
2,3'-Dimethyl-4'-amino*azobenzene*	H	
2,2'4'-Trihydroxy-5-chloro*azobenzene*-2,2'-copper complex	H	
1,1'-*Azo*bis(formamide) (Azodicarbonamide)	H	Used in rubber processing.
2,2'-*Azo*bis(isobutyronitrile) (AIBN)	H*	Used in rubber processing.
*Azo*xybenzene	H	
Benzene	**F**	
Benzenediazonium chlorides	H	Dye intermediate
m-Benzenedisulfonic acid, diSodium	**G**	
Benzene phosphorus dichloride	H**	
Benzene phosphorus thiodichloride	H**	
Benzenesulfonic acid	H	Surface active agents. Regulated by Part 417,
m-Benzenedisulfonic acid, disodium	**G**	if reported under SIC 2843 (414.11c).
Dodecyl*benzene* sulfonic acid, sodium	H	Surface active agent
Benzenesulfonyl chloride	H*	
1,4-Dibutoxy*benzene*	H	
1,4-Diethoxy*benzene*	H	
m-Dimethoxy*benzene*	H*	
p-Dimethoxy*benzene* (Hydroquinone ether)	H*	
Diisopropyl*benzene*	H	
Divinyl*benzene*	H	
Fluoro*benzene*	H*	
Isobutyl*benzene*	H*	
1,3,5-Triisopropyl*benzene*	H*	
Benzidines:		
3,3'-Dichloro*benzidine* : 2HCl	H	
Benzil (1,2-Diphenylethanedione)	H	
Benzilic acid	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Benzimidazoles:		
6-Nitro*benzimidazole*	H	
Benzoates (benzoic acid esters):		
n-Butyl benzoate	H*	
tert-Butyl per*benzoate*	H	See Peroxyesters
Benzyl benzoate	H	See Flavors & Fragrances
2,4-Di-tert-butylphenyl-3,5-di-*tert*-butyl-4-hydroxy benzoate	H	
Diethylene glycol, di*benzoate*	H	See GLYCOL Esters
Methyl benzoate	H*	
Propylene glycol, di*benzoate*	H*	See GLYCOL Esters
Resorcinol mono*benzoate*	H*	
Benzoate salts:		
Ammonium benzoate	H*	
Sodium benzoate	H	
Benzoic acid	**G**	
m-, *p*-Amino*benzoic* acid	**G**	
o-Amino*benzoic* acid	H	See Anthranilic acid
p-tert-Butyl*benzoic* acid	H	
Chloro*benzoic* acids	H	
Diamino*benzoic* acid	H	
m-(N,N-dimethylamino) benzoic acid	H	
3,5-Dinitro*benzoic* acid	H	
p-Hydroxy*benzoic* acid	H	
p-Hydroxy*benzoic* acid esters (Parabens)	H*	
m-, *o*-, *p*-Nitro*benzoic* acid	H	
Thio*benzoic* acid	H*	
Benzoin (Benzoylphenylcarbinol)	H	See Carbinols
Benzofurans	H	
Di*benzofuran*	H	
Benzonitrile	H	
Benzophenone	H	See Flavor & Fragrances
2-Hydroxy-4-octyloxy*benzophenone*	H	
2-Hydroxy-4-methoxy*benzophenone*	H	Pigment intermediate
Benzoquinone (Quinone)	H	See Quinone
p-Benzoquinone dioxime	H	Used in rubber processing.
Benzothiazoles:		
2,2'-Dithio-bis(*benzothiazole*) (MBTS)	H*	Used in rubber processing.
2-Mercapto*benzothiazole* (MBT)	H*	
2-Mercapto*benzothiazole*, Zinc salt	H*	
2-(morpholinothio)*benzothiazole*	H	Used in rubber processing.
Benzothiazolesulfenamides:		
N-tert-Butyl-2-benzothiazole-sulfenamide	H*	Used in rubber processing.

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Benzothiazolesulfenamides (continued):		
N-Cyclohexyl-2-benzothiazole-sulfenamide	H	Used in rubber processing.
N-Oxydiethylene-2-benzothiazole-sulfenamide	H*	Used in rubber processing.
Benzotriazole	H	
1-Hydroxy*benzotriazole*	H*	
Benzotrichloride	H	
o-, *p*-Chloro*benzotrichloride*	H	
Benzotrifluoride	H	
Benzoyl chloride	H	
Chloro*benzoyl* chloride	H	
Benzyl chloride	**G**	
a-Ethyl*benzyl* chloride	H	
o-, *p*-Methyl*benzyl* chloride	H*	
Benzyl cyanide	H	
Benzyl dichloride (benzal chloride)	H	
Biphenyl	H	
Butyl biphenyl	H*	
Decabromo*biphenyl*	H	
Decabromo*biphenyl* oxide	H	See ETHERS
Hexabromo*biphenyl*	H	
Isopropyl*biphenyl*	H*	
Tetrabromo-tetramethyl-dihydroxy *biphenyl*	H	
Biphenylamines (amino*biphenyl*s)	H	See AMINES
2-Biphenylamine (2-Amino*biphenyl*)	H	
4-Biphenylamine (4-Amino*biphenyl*)	H	
2,4'-Biphenyldiamine (2,4'-Diamino*biphenyl*)	H	
2-Nitro-4'-amino*biphenyl*	H	
Bisphenol A	**G**	
Tetrachloro *bisphenol A*	H	
Bromobenzene	H	
Hexa*bromobenzene*	H	
Bromoethylbenzenes	H	
Di*bromoethylbenzene*	H*	
Bromomethanes:		
*Bromo*chloro*methane*	H	
*Bromo*dichloro*methane*	H	
*Bromo*trifluoro*methane*	H	
Di*bromo*difluoro*methane*	H	
Dibromomethane	H	
BTX (**B**enzene, **T**oluene, **o-, m-, p-X**ylenes)	**G**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Butadiene	**F**	See Hydrocarbons C-4
2-Chloro*butadiene*	H	
Hexachloro*butadiene*	H	
Hexafluoro*butadiene*	H*	
n-**Butane**	**G**	See Hydrocarbons C-4
1,4-Dibromo*butane*	H*	
1,4-Butanediol	**G**	See Diols
n-**Butanol** (Butyl alcohol)	**G**	See ALCOHOLS
sec-Butanol	**G**	
tert-Butanol	**G**	
1-Butene	**G**	See Hydrocarbons C-4
2-Butene (cis & trans)	**G**	See Hydrocarbons C-4
trans-1,4-Dichloro-2-*butene*	H	
2-**Butoxy**ethanol	**G**	See GLYCOL Monoethers
Butyl, octyl phthalate	**G**	See Phthalates
n-Butyl acetate	**G**	See Acetates
n-Butyl acrylate	H	See Acrylates
n-Butylamine	**G**	See AMINES
sec-Butylamine	**G**	See AMINES
tert-Butylamine	**G**	See AMINES
n-Butyl bromide	H*	See Alkyl bromides
n-Butyl chloride (1-Chlorobutane)	H	
Butylenes (mixed)	**F**	See Hydrocarbons C-4
*p-tert-Butyl*phenol	**G**	See Phenol
n-**Butyraldehyde**	**G**	See ALDEHYDES
n-Butyraldehyde-aniline condensate	H*	Used in rubber processing.
Butyrates (*butyr*ic acid esters)	H	
n-**Butyric** acid	**G**	See ACIDS
Butyric acid anhydride	**G**	
Butyrolactone (gamma and beta)	H	
Caprolactam	**G**	
Carbamates	H	
Carbinols:		
Benzoylphenyl *carbinol* (Benzoin)	H	
Methyl cyclohexyl carbinol	H	
Methyl isobutyl carbinol	H	
4,4'-bis (N,N-Dimethylaniline) carbinol	H	
Carbon disulfide	**G**	
Carbon tetrabromide	H	
Carbon tetrachloride	**G**	
Carbon tetrafluoride	H	
Carbonates:		
Ethylene carbonate (Glycol carbonate)	H	
Diethyl*carbonate*	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Carbonates (continued):		
Diphenyl*carbonate*	H*	
Castor oil	X	Vegetable oil extracted from plants (414.11e). Should be reported under SIC 2076.
Cellulose acetate butyrate	->	See PLASTICS
Cellulose Ethers:		
Carboxymethyl cellulose, sodium	**G**	
Carboxymethyl hydroxyethyl cellulose, sodium	**G**	
Ethyl cellulose	H	
Hydroxybutyl cellulose	H*	
Hydroxybutyl methyl cellulose	H*	
Hydroxyethyl cellulose	H	
Hydroxyethyl ethyl cellulose	H*	
Hydroxyethyl methyl cellulose	H*	
Hydroxypropyl cellulose	H*	
Hydroxypropyl methyl cellulose	H	
Methyl cellulose	H	
Cellulose *sponge*	X	Product deleted [55 FR 42339 (Oct. 18,1990)]. Should be reported under SIC 3089.
Cellulose, oxidized (market *pulp*)	X	Regulated by Part 430 and reported under SIC 2611 (414.11d).
Cellulose nitrate (Nitrocellulose)	X	Explosives. Regulated by Part 457 and
Cellulose tetranitrate	X	reported under SIC 2892 (414.11.d).
Cetyl bromide (1-Bromohexadecane)	H	
Chelating agents:		
Diethylene**t**riamine**p**entaacetic **a**cid (DTPA) Metal salts: Iron [Ferric], Sodium	H	
N,N-Dihydroxyethyl*glycine*	H	
Ethanoldi*glycine*	H	
Ethylene**d**iamine**t**etr**a**cetic acid (EDTA) and its metal salts (Cobalt, Copper, Iron, Manganese, Potassium, Zinc)	**G**	
N-**H**ydroxyethyl**e**thylenediamine-**t**riacetic **a**cid (HETA) and its metal salts (Iron, Manganese, Sodium, Zinc)	H	
Nitrilotriacetic acid (NTA) and its metal salts (Sodium)	**G**	
Sodium glucoheptonate	H	
Chloral hydrate (trichloroacetaldehyde)	H	See ALDEHYDES
Chloramine	H	
Chlorendic acids & salts	H	Pesticide intermediates – not regulated by Part 455.
Chlorendo compounds:		
Bromo(*chlorendo*)cyclooctadiene	H	Pesticide intermediates – not regulated by Part 455.
Chlorendocyclooctadiene	H	Pesticide intermediates – not regulated by Part 455.
bis(*chlorendo*)cyclooctadiene	H	Pesticide intermediates – not regulated by Part 455.

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Chlorendo compounds (continued)		
bis(*chlorendo*)cyclopentadiene	H	Pesticide intermediate – not regulated by Part 455.
bis(*chlorendo*)furan	H	Pesticide intermediate – not regulated by Part 455.
Chlorides:		
Acetyl chloride	H	
Allyl chloride	**G**	
Amyl chloride	H	
Benzene*diazonium* chlorides	H	See Dyes, Azoic diazo
Benzene phosphorus dichloride	H**	See Phosphorus organics
Benzene*sulfonyl* chloride	H*	See Benzene
Benzotrichloride	H	
Benzoyl chloride	H	
Benzyl chloride	**G**	
Benzyl di*chloride* (Benzal chloride)	H	
n-Butyl chloride (1-Chlorobutane)	H	
Carbon tetra*chloride*	**G**	
Choline chloride	H	
Cyanogen chloride	**G**	
Cyclohexyl chloride	H*	See Cyclohexane
Cyclopentyl chloride	H*	
n-Dodecyl chloride	H*	
Ethyl chloride	**G**	See Chloroethanes
Ethylene di*chloride*	**F**	See Chloroethanes
2-Ethylhexanoyl chloride	H*	
Ethyl phosphonothioic di*chloride*	H	See Phosphonic acid
2-Furoyl chloride	H*	
n-Hexyl chloride	H*	
Isophthaloyl chloride	H	
Isopropyl chloride	H	
Methallyl chloride	H	
Methyl chloride	**G**	See Methane
Methylene chloride	**G**	
Methylmagnesium chloride	H**	See Organo-Metallics
Palmitoyl chloride	H*	
Phenacetyl chloride	H	
Phthaloyl chloride	H	
Pivaloyl chloride	H*	
n-Propyl chloride	H	See Chloropropanes
Propylene di*chloride*	H	See Chloropropanes
Terephthaloyl chloride	H	
Tetrakis(Hydroxymethyl)-phosphonium chloride	H	See Phosphonium salts
Triethylene glycol di*chloride*	H*	See GLYCOLS
Trimethylbenzyl*ammonium* chloride	H**	See Tetraalkylammonium salts
Vinyl chloride	**F**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Chlorides (continued)		
Vinylidene chloride	**G**	See Chloroethylenes
Chlorinated paraffins (wax, 35-64% Cl)	**G**	
Chlorinated paraffin sulfonate	H	
Chloroacetates (esters and salts):		
Ethyl chloroacetate	H	
Methyl chloroacetate	H*	
Sodium chloroacetate (salt)	H	
Chloracetic acid	H	
Chlorobenzene	**G**	
Chlorobenzenes (mixed isomers)	**G**	
o-, *m*-, *p*-Di*chlorobenzene*	H	
Penta*chlorobenzene*	H	
Tetra*chlorobenzene*	H*	
Tri*chlorobenzene*	H	
Chloro-m-cresol	**G**	See Chlorophenols
Chloroethanes:		
Chloroethane (Ethyl chloride)	**G**	
1,2-Di*chloroethane* (Ethylene dichloride)	**F**	
Hexa*chloroethane*	H	
1,1,1,2-Tetra*chloroethane*	H	
1,1,2,2-Tetra*chloroethane*	H	
Tetrafluorodi*chloroethane*	H	
1,1,1-Tri*chloroethane* (Methylchloroform)	**G**	
1,1,2-Tri*chloroethane*	H	
Trifluorodi*chloroethane*	H	
1,2,2-Trifluoro-1,1,2-tri*chloroethane*	H	
Chloroethylenes:		
1,2-Di*chloroethylene*	H	
Tetra*chloroethylene* (Perchloroethylene)	**G**	
Tri*chloroethylene*	**G**	
1,1-Di*chloroethylene* (Vinylidene chloride)	H	See Vinylidene chloride
Chlorofluorocarbons (CFC's):		"Freon" is a DuPont Trademark
Chlorodifluoro*methane* (HCFC-22)	**G**	
Chloropentafluoro*ethane* (CFC-115)	H*	
Chlorotrifluoro*methane* (CFC-13)	H	
Chlorotrifluoro*ethylene* (CFC-123)	H*	
Dichlorodifluoro*methane* (CFC-12)	H	Production of this CFC restricted or banned in U.S.
Dichlorofluoro*methane* (HCFC-21)	H	
1,2-Dichlorotetrafluoro*ethane* (CFC-114)	H*	
1,1-Difluoro-1,1,2-trichloro*ethane*	H*	
Trichlorofluoro*methane* (CFC-11)	**G**	Production of this CFC restricted or banned in U.S.

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Chloroform (trichloromethane)	**G**	
Chloroformates:	H	
Benzyl chloroformate	H*	
sec-Butyl chloroformate	H*	
Ethyl chloroformate	H*	
Ethyl chloro*thio*formate	H*	
2-Ethylhexyl chloroformate	H*	
Isobutyl chloroformate	H*	
Isopropyl chloroformate	H*	
Methyl chloroformate	H*	
Phenyl chloroformate	H*	
Chlorohydrins:		
Dichlorohydrin (2,3-Dichloropropanol)	H	
Ethylene chlorohydrin (2-Chloroethanol)	H	
Mono*chlorohydrin* (3-Chloro-1,2-propanediol)	H	
Propylene chlorohydrin (2-Chloropropanol)	H	
Chloromethanes	->	Carbon tetrachloride, Chloroform, Methyl chloride, Methylene chloride.
Chloronitrobenzenes:		
p-Chloronitrobenzene (PNCB) (4-Chloronitrobenzene)	H	Dye intermediate
2,5-Diethoxy-4-*chloronitrobenzene*	H	
o-Chloronitrobenzene (ONCB)	[H]	Pesticide intermediate – not regulated by Part 455.
m-Chloronitrobenzene	H	
Di*chloronitrobenzenes*	H	
Chlorophenols:		
o-Chlorophenol	H	
2-*Chloro*-5-methyl*phenol* (6-Chloro-m-cresol)	**G**	
2,4-Di*chlorophenol*	**G**	
2,3-Di*chlorophenol*	H*	
3,4-Di*chlorophenol*	H*	
3,5-Di*chlorophenol*	H*	
Tetra*chlorophenol*	H	
2,4,6-Tri*chlorophenol*	H	
3,4,5-Tri*chlorophenol*	H	
Chloropicrin (Trichloronitromethane)	X	Pesticide active ingredient. Regulated by Part 455 and reported under SIC 2879 (414.11d).
Chloroprene (2-Chloro-1,3-butadiene)	**G**	
Chloropropanes:		
1-Chloropropane (n-Propyl chloride)	H	
1,2-Di*chloropropane* (Propylene dichloride)	H	
1,2,3-Tri*chloropropane*	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Chlorosulfonic acid	X	Inorganic chemical. May be regulated by Part 415, if reported under SIC 2819 (414.11d)
o-, *m*-, *p*-Chlorotoluene	H	
Choline chloride (non-medicinal, feed-grade)	H	Poultry and swine nutrition factor.
Choline chloride (medicinal-grade)	X	Medicinal chemical. Regulated by Part 439 and reported under SIC 2833 (414.11d).
Citrates (citric acid esters):		
Diethylcarbamazine citrate	H	
Polyglycerol citrate	H*	
Triethyl citrate	H	
Citric acid	X	Made by fermentation process (414.11e).
Coal Tar (from production of coke)	X	Coke by-product. May be regulated by Part 420, if reported under SIC 3312 (414.11d).
Coal Tar Crudes (from distillation of coal tar):		
Distillate oils:		
Creosote oil	**G**	
Light oil	H*	
Naphthalene	**G**	
Methylnaphthalene	H	
Solvent naphtha	H*	
Tar acids:		
Cresols, mixed (Cresylic acids)	**G**	
Cresylic acids, mixed	**G**	Same as Cresols, mixed.
Tar bases: Pyridines, "natural"	H*	
Tars (road materials & other)	**G**	
Pitches (of tar)	**F**	
Coal tar products (miscellaneous)	**G**	
Coconates (coconut oil esters)	[H*]	See fatty acid esters (derivatives of “natural” fatty acids). Surface active agents. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Methyl coconate	[H*]	
Coconut oil acid esters	[H*]	
Coconut oil alkyl amines (fatty amines)	[H*]	Surface active agent
Coconut oil amide	[H*]	Surface active agent
Concentrates, C5 & C9	->	See Hydrocarbons
Cresols (from hydrocarbon processes):		
Cresols, mixed (Cresylic acid)	**G**	
o-, *m*-, *p*-*Cresol* (Cresylic acid isomers)	**G**	
Cresols, mixed (from coal tar condensate)	**G**	See Coal tar products
Cresols:		
2,6-Di-tert-butyl-p-*cresol* (BHT) (Butylated hydroxytoluene)	H*	
Dinitro-p-*cresol*	H*	
4,6-Dinitro-o-*cresol* (DNOC)	[X]	Pesticide active ingredient. Regulated by Part 455 and reported under SIC 2879.
Cresoxide, Sodium (Cresylic acid salt)	H*	
Cresyl esters	H**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Cresyl ethers	H**	
Cresylic acid (*o*-, *m*-, *p*-*Cresol* mixture)	**G**	See Cresols (cresylic acid)
Cumene (Isopropylbenzene)	**F**	
Cumenesulfonic acid, Salts	X	Surface active agent. Regulated by Part 417, if reported under SIC 2843 (414.11c)
Cumene hydroperoxide	**G**	See Hydroperoxides
Cumic alcohol (p-Isopropylbenzyl alcohol)	H*	See Flavors & Fragrances
Cyanamide, Calcium	H	
Cyanoacetates:		
Ethyl cyanoacetate	H	
2-Ethylhexyl cyanoacetate	H*	
Cyanogen (Ethanedinitrile)	**G**	
Cyanogen chloride	**G**	
Cyanurates (cyanuric acid esters):		
Triallyl*cyanurate*	H*	
Triphenyl*cyanurate* (2,4,6-Triphenoxy-s-triazine)	H	
Cyanuric acid (2,4,6-Trihydroxy-s-triazine)	**G**	See isocyanuric acid (tautomeric ketone)
Cyanuric chloride (2,4,6-Trichloro-s-triazine)	**G**	
Cyclamen aldehyde	H	See Flavors & Fragrances
Cyclic aromatic sulfonates	->	See Sulfonic acids, salts
Cycloheptadienes:		
Tetrabromophenylhexachloro-bicyclo *heptadiene*	H	Pesticide intermediate – not regulated by Part 455.
Cyclohexane	**F**	See Hydrocarbons C-6
1,2-*Cyclohexane*dicarboxylic anhydride (Tetrahydrophthalic anhydride)	H	See Phthalic anydride
1,4-*Cyclohexane*dimethanol	H*	
Pentabromochloro*cyclohexane*	H*	
1-Isopropyl-4-methyl*cyclohexane* (p-Menthane)	H*	
Cyclohexanol	**G**	
Cyclohexanol-Cyclohexanone (mixture)	**G**	
Cyclohexanone	**G**	
Cyclohexanone oxime	H*	
Cyclohexene	**G**	See Hydrocarbons C-6
4-Vinyl-1-*cyclohexene*	H	
Cyclohexylamine (Amino*cyclohexane*)	H*	See AMINES
Cyclohexyl chloride (Chloro*cyclohexane*)	H*	
Cyclonite (RDX)	X	Explosive. Regulated by Part 457 and reported under SIC 2892 (414.11c).
Cyclooctadiene	H	
Cyclopentadiene dimer	H	
Methyl*cyclopentadiene* dimer	H*	
Cyclopentane	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Cyclopentanol (Cyclopentyl alcohol)	H*	
Cyclopentyl bromide	H*	
Cyclopentyl chloride	H*	
Cyclopropanes	H	
Cyclopropane carboxylic acid	H*	
Cyclopropylamine	H*	See AMINES
Methyl-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylate	H*	
Decaborane	[H]	Inorganic chemical. May be regulated by Part 415, if reported under SIC 2819 (414.11d).
n-**Decane**	H*	
Decanoates (Decanoic acid esters)	H*	
Decanoic acid (Caproic acid)	H*	See ACIDS Carboxylic
1-Decanol	**G**	See ALCOHOLS
1-**Decene**	H*	See Olefins (alpha)
Diacetone alcohol	**G**	See ALCOHOLS
Diazenes:		
(2-Methylphenyl)(3-methyl-4-aminophenyl) *diazene*	H	Dye intermediate
Dibenzylazocarboxylate	H	
Dibutyl phthalate	**G**	See Phthalates
Dicarboxylic acids & salts	->	See ACIDS Dicarboxylic
1,2-Dichloroethane (Ethylene dichloride)	**F**	See Chloroethanes
1,1-Dichloroethane	**G**	See Chloroethanes
Dichloronitrobenzenes	H	See Chloronitrobenzenes
2,4-Dichlorophenol	**G**	See Chlorophenols
Dicyclopentadiene	H	See Cyclopentadiene dimer
Diethanolamine	**G**	See Ethanolamines
N,N-Diethylaniline	**G**	See Aniline
Diethyl ether	**G**	See ETHERS
Diethylene glycol	**G**	See GLYCOLS
Di(2-Ethylhexyl) phthalate	**G**	See Phthalates
Diisobutyl phthalate	**G**	See Phthalates
Diisodecyl phthalate	**G**	See Phthalates
Dimer acid (Dilinoleic acid)	**G**	Tradenames: *AZ Dimer Acid, Versadyme,*
Dimer acid, ammonium salt	H	*Empol, Crodym, Unidyme, Hystrene.*
Trimer acid (Trilinoleic acid)	H*	
2,6-Dimethylaniline (2,6-Xylidine)	**G**	See Xylidines
N,N-Dimethylformamide (DMF)	**G**	See AMIDES
Dimethylhexanes:		
2,5-Dimethyl-2,4-hexadiene	H	
2,5-Dimethyl-2,5-hexanediol	H*	See Diols & Peroxyesters
2,5-Dimethylhexane-2,5-dihydroperoxide	H*	See Hydroperoxides
2,5-Dimethyl-2,5-di-(tert-butylperoxy) hexane	H	See Peroxides

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Dimethylhexanes (continued):		
2,5-Dimethyl-3-hexyn-2,5-diol	H*	See Diols
2,5-Dimethyl-2,5-di-(tert-butylperoxy) hex-3-yne	H	See Peroxides
Dimethyl phthalate	**G**	See Phthalates
Dimethyl terephthalate (DMT)	**F**	See Terephthalic Acid
Dinitrosobenzene	H	
Dinitrotoluenes (mixed isomers)	**G**	See Nitrotoluenes
2,4-Dinitrotoluene	**G**	
2,6-Dinitrotoluene	**G**	
Diols:		
1,4-Butane*diol*	**G**	
2,3-Dibromo-1,4-butane*diol*	H	
1,3-Butane*diol*	H	
1,2,4-Butane*triol*	H	
1,4-Butene*diol* (2-Butene-1,4-*diol*)	H	
1,4-Butyne*diol* (2-Butyne-1,4-*diol*)	H	See Acetylenic diols
2,5-Dimethyl-2,5-hexane*diol*	H*	See Dimethylhexane
1,6-Hexane*diol*	H	See Hexamethylene glycol
2,2-Dimethyl-1,3-pentane*diol*	H*	See GLYCOLS, Neopentyl
2,2,4-Trimethyl-1,3-pentane*diol*	**G**	See Trimethylpentane
3-Chloro-1,2-propane*diol*	H*	
1,4-Dioxane (p-Dioxane)	**G**	
1,3-Dioxolane	H	
a-Bromoacetoxymethyl dioxolane	H	
2,2-Dimethyl-1,3-*dioxolane*-4-methanol	H*	
Diphenylamine	**G**	See AMINES
Diphenylamine-acetone condensate	H*	Used in rubber processing.
p-Nitroso*diphenylamine*	H	
N-Nitroso*diphenylamine*	H	See Nitrosamines. Used in rubber processing.
Octyl*diphenylamine*	H*	Used in rubber processing.
Dipropylene glycol	**G**	See GLYCOLS
Disalazanes	->	See Silanes
Dithiocarbamates (N,N-Dialkyl-):		
Di-n-butyl*dithiocarbamate*, metal salts	H	Used in rubber processing.
Diethyl*dithiocarbamate*, Zinc	H	Used in rubber processing.
2-Dimethylaminoethyl*dithiocarbamate*, Sodium	H	
Dimethyl*dithiocarbamate*, Metal salts	H*	Used in rubber processing.
Dithiophosphates, sodium salt	[X]	Inorganic chemical. May be regulated by Part 415, if reported under SIC 2819. Removed from OCPSF applicability [55 FR 42336 (Oct. 18, 1990)].
Dithiophosphate esters	->	Phosphorodithioic acid esters.
Ditridecyl phthalate	G	See Phthalates

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
n-**Dodecane**	H*	
Dodecanoates (dodecanoic acid esters)	H*	
Dodecanoic acid (Lauric acid)	H	See ACIDS Carboxylic
1-Dodecanol (Lauryl alcohol)	**G***	See ALCOHOLS
Dodecene, non-linear (Propylene tetramer)	H	
1-Dodecene, linear (Ethylene oligomer)	H	See Olefins (alpha)
n-**Dodecyl** bromide	H*	
n-Dodecyl chloride	H*	
n-Dodecyl lactate	H*	
p-Dodecylphenol	H	See Phenol
Dodecyl sulfate triethanolamine salt	[H]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Dyes, organic and dye intermediates	H	
Acid Dyes	H*	
Methyl Red (C.I. Acid Red 2)	H	
Anthraquinones	H	See Anthraquinone
Azoic (Azo) dyes	H*	
Azoic coupling components	H*	
Anisoles (Methoxybenzenes)	H	See Anisole
1,2-Dimethoxybenzene (Veratrole)	H	
Naphthol a(mine) s(ulfonates)	H*	
Nitroanisoles	H	
Hydrazobenzene	H	Dye intermediate
Azoic diazo components	H*	
Anilines	H	See Aniline
Anisidines (Methoxyanilines)	H	
Benzenediazonium chloride	H	
Diazenes	H	See Diazenes
Nitroanilines	H	See Nitroaniline
Phenetidines (Ethoxyanilines)	H	Dye intermediates
Basic dyes	H*	
Cationic dyes	H*	
Direct dyes	H	
Disperse dyes	H*	
Fiber Reactive dyes	H*	
Fisher's base	H	Dye intermediate
Fluorescent dyes	H*	
bis(4-amino-2-sulfonic acid) stilbene	H*	
Fluorescein sodium	H*	
Mordant dyes	H*	
Solvent dyes	H*	
Sulfur dyes	H*	
Vat dyes	H*	
Vat Blue 6	H	
Epichlorohydrin	**G**	
Epoxidized esters	H	
Linseed oil, epoxidized	H*	Used as a plasticizer in plastic products.

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Epoxidized esters (continued):		
Soybean (Soya) oil, epoxidized	H*	Used as a plasticizer in plastic products.
Tallate esters, epoxidized	H*	Used as a plasticizer in plastic products.
Erythritol anhydride	H	
Ethane	**G**	
1,2-Diethoxy*ethane*	H	See GLYCOL diethers
1,1-Difluoro*ethane*	H	
1,2-Dimethoxy*ethane*	**G**	See GLYCOL diethers
1,2-Diphenoxy*ethane*	H	See GLYCOL diethers
Hexafluoro*ethane*	H*	
Iodo*ethane* (Ethyl iodide)	H*	
Nitro*ethane*	H	
Ethanol (Ethyl alcohol) "natural"	X	Made by fermentation process (414.11e).
Ethanol (Ethyl alcohol) "synthesis"	G	See ALCOHOLS
2-Bromo*ethanol*	H	
2-Butoxy*ethanol*	**G**	See GLYCOL monoethers
2-(2-Butoxyethoxy) ethanol	H	See GLYCOL monoethers
2-Ethoxy*ethanol*	**G**	See GLYCOL monoethers
2-(2-Ethoxyethoxy) ethanol	**G**	See GLYCOL monoethers
2-Mercapto*ethanol*	H*	See MERCAPTANS
2-Methoxy*ethanol*	**G**	See GLYCOL monoethers
2-(2-methoxyethoxy) ethanol	**G**	See GLYCOL monoethers
2-Phenoxy*ethanol*	**G**	See GLYCOL monoethers
2-Propoxy*ethanol*	H	See GLYCOL monoethers
Trifluoro*ethanol*	H	
Ethanolamines (Aminoethanols):		
Aminoethyl*ethanolamine*	H	
tert-Butyl*aminoethanol* (tert-Butyl*ethanolamine*)	H*	
tert-Butyl*amino*di*ethanol*	H*	
Di*ethanolamine* (2,2'-Iminodiethanol)	**G**	
m-Chlorophenyl di*ethanolamine* (N,N-Dihydroxyethyl-m-chloroaniline)	H*	
N-Methyl di*ethanolamine*	H*	
N-Phenyl*imino* di*ethanol* (N,N-Dihydroxyethylaniline)	H*	
2-(Diethyl*amino*) ethanol	H*	
2-(Diethyl*amino*ethoxy) ethanol	H*	
2-(Dimethyl*amino*) ethanol	H	
2-(Methyl*amino*) ethanol	H*	
Mono*ethanolamine* (2-Aminoethanol)	**G**	
Ethanolamine N-thioglycolate	H*	
Ethanolamine N-sulfite	H*	
N-Ethyl*ethanolamine*	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Ethanolamines (continued)		
Tri*ethanolamine*	H	
Trimethylaminoethyl*ethanolamine*	H	
ETHERS		
Butyl (Di-n-butyl) ether	H*	
Ethyl (Diethyl) ether	**G**	
Isopropyl (Diisopropyl) ether	H	
Methyl (Dimethyl) ether	H	
Methyl-*tert*-butyl ether (MTBE)	[**G**]	A refinery petrochemical regulated by Part 419, if reported under SIC 2911 (414.11d).
Chloroalkyl ethers:		
bis(2-Chloroethoxy) methane	H	
2-Chloroethyl vinyl ether	H	
2,2'-Dichloroethyl ether	H*	Pesticide intermediate – not regulated by Part 455.
bis(2-Chloroisopropyl) ether	H	
Chloromethyl methyl ether	H	
Dichloromethyl methyl ether	H	
Crown ethers (Ionophores)	H	See Polyvinyl pyrrolidinone
Phenyl ether (Diphenyl ether, Diphenyl oxide)	H	
2-Chloro-4-trifluoromethyl-3-carboxy-4'-nitrodiphenyl ether	H	
Polybrominated diphenyl ethers	H*	
Decabromodiphenyl ether	H	
Polychlorinated diphenyl ethers	H	
Polyphenyl ethers (Polyaryl ethers)	H	
bis(2,3-Dibromopropylether)-3,3'-bis(tetrabromophenyl) di*ether*	H	
Vinyl ethers	H	
n-Butyl vinyl ether	H*	
Ethyl vinyl ether	H*	
Isobutyl vinyl ether	H*	
Methyl vinyl ether	H*	
2-**Ethoxy**ethanol	**G**	See GLYCOL monoethers
2-(2-Ethoxyethoxy) ethanol	**G**	See GLYCOL monoethers
bis(2-Ethoxyethyl) ether	**G**	See GLYCOL diethers
Ethoxylates (ethylene oxide adducts):		
Nonylphenol, ethoxylated	[**G***]	Surface active agents. Regulated by Part 417, if reported under SIC 2843 (414.11c).
Polyoxyalkylene amines	[H]	
Polyethylene glycol monostearate	[H]	Surface active agent
Polyglycerol (Glycerol ethoxylate)	[H]	Surface active agent
Ethyl acetate	H	See Acetates
Ethyl acrylate	**G***	See Acrylates
Ethylate, Sodium (caustic ethanol)	H*	
Ethyl bromide	H	See Alkyl bromides
Ethyl chloride (Chloroethane)	**G**	See Chloroethanes
Ethyl ether (Diethyl ether)	**G**	See ETHERS

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Ethyl iodide	H	
Ethyl orthoformate	H	
Ethylbenzene	**F**	
Bromoethyl*benzene*	H	
Dibromo*ethylbenzene*	H	
Tribromo*ethylbenzene*	H	
2-**Ethylbutyraldehyde**	**G**	See ALDEHYDES
Ethylene (Ethene)	**F**	
trans-bis(n-propylsulfonyl) ethylene	H	
1,1-Difluoro*ethylene*	H*	
Trifluoro*ethylene*	H*	
Ethyleneamines:		
Ethylenediamine	**G**	See AMINES
N,N-Diethyl*ethylene*di*amine*	H*	
Di*ethylene* di*amine* (Piperazine)	H*	See Piperazine
Ethylenediamine dihydroiodide	H*	
Ethylenediamine-N,N'-distearic acid (N,N'-Ethylenebis stearamide)	H	
Ethylenediaminetetraacetic acid	**G**	See Chelating Agents, EDTA
Ethylenediaminetetraacetonitrile	H*	See Nitriles
N-Hydroxyethyl*ethylene*di*amine*-triacetic acid	H	See Chelating Agents
N,N,N',N'-Tetramethyl*ethylene*di*amine*	H	
N,N,N',N'-Tetrakis(2-hydroxypropyl) ethylenediamine	H*	
Tri*ethylene* di*amine* (1,4-Diazabicyclo[2.2.2] octane)	H	
Polyethylene (Polyalkylene) polyamines	H	See AMINES
Di*ethylene* tri*amine*	H	
Di*ethylene*tri*amine*pentaacetic acid	H	See Chelating Agents
Tri*ethylene* tetr*amine*	H	
Tetra*ethylene* pent*amine*	H	
Penta*ethylene* hex*amine*	H*	
Ethylene dichloride (1,2-Dichloroethane)	**F**	See Chloroethanes
Ethylene dibromide (1,2-Dibromoethane)	H	
Ethylene glycol	**F**	See GLYCOLS
Ethylene oxide	**F**	
Ethylenimine (Aziridine)	H*	See Aziridine.
2-**Ethylhexa**ldehyde (2-Ethylhexanal)	**G***	See ALDEHYDES and Oxo Aldehydes
2-Ethylhexanoic acid	H	See ACIDS and Oxo Acids
2-Ethylhexanoates, metal salts	H*	See ACIDS, salts
2-Ethylhexanol	**G**	See ALCOHOLS and Oxo Alcohols
2-Ethylhexanoyl chloride	H*	
Fats (or vegetable oils), sulfurized	H	May be reported under SIC 2899.

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Fatty Acids "synthetic"	[X]	OCPSF amended. [55 FR 42337 (Oct. 18, 1990)].
Fatty acids "natural" (from animal fat)	X	Regulated by Part 417 and reported under SIC 2843 (414.11d).
Fatty acids "natural" (from fish oils or vegetable oils):		
Coconut oil acids (C-8 to C-20)	H*	
Linoleic acid (9,12-Octadecadienoic acid)	H*	
Margaric acid (Heptadecanoic acid)	H*	May be reported under SIC 2899.
Myristic acid (Tetradecanoic acid)	H*	
Oleic acid (cis-9-Octadecenoic)	H*	May be reported under SIC 2899.
Palmitic acid (Hexadecanoic acid)	H*	
Ricinoleic acid (12-Hydroxy-9-octadecenoic acid)	H*	
Stearic acid (Octadecanoic acid)	G*	May be reported under SIC 2899.
12-Hydroxystearic acid	H*	
Fatty Acids, metal salts	H	
Ammonium stearate	H*	
Calcium stearate (wax)	**G**	
Cobalt tallate (Tall oil acid)	H*	
Zinc stearate	H	
Fatty acid esters	H	Surface active agents. Regulated by Part 417,
Coconates (Coconut oil esters)	[H*]	if reported under SIC 2843 (414.11c).
Glyceryl esters of mixed fatty acids	[H]	See Glycerin
Myristates (Myristic acid esters)	[H*]	Surface active agent. See Myristates.
Oleates (Oleic acid esters)	[H*]	Surface active agent. See Oleates.
Palmitates (Palmitic acid esters)	[H*]	Surface active agent. See Palmitates.
Sebacates (Sebasic acid esters)	[H*]	Surface active agent. See Sebacates.
Stearates (Stearic acid esters)	[H*]	Surface active agent. See Stearates.
Tallowates (tallow acid esters)	[H*]	Surface active agent. See Tallowates.
Fatty amides:		
Coconut oil amide	[H*]	Surface active agents. Regulated by Part 417,
Oleamide	[H*]	if reported under SIC 2843 (414.11c).
Fatty amines	[**G**]	Surface active agent
Fatty nitriles	[**G**]	Surface active agent. See Nitriles
Flavor & Fragrance (aroma) chemicals:		
Acetophenone	H	See KETONES
Acetyl butyryl (2,3-Hexanedione)	H*	
Acetyl propionyl (2,3-Pentanedione)	H*	
Alloocimene	H*	
Allyl alcohol esters	H*	
Allyl alpha-ionone	H*	
4-Allyl veratrole	H*	
Anethole (Isoestragole)	H*	
p-Anisaldehyde	H*	
Anisyl alcohol and esters	H*	
Benzoic acid esters (benzoates)	H*	See Benzoates

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Flavor & Fragrance (aroma) chemicals (continued):		
Benzophenone (Diphenyl ketone)	H*	See KETONES
Benzyl alcohol	H	See ALCOHOLS
Benzyl alcohol esters	H*	
Benzyl acetate	H	See Acetates
Benzyl benzoate	H	See Benzoates
Butyl butyryl lactate	H*	
Camphene	H	
Caryophyllene	H	
α-Cedrene (Vertofix Coeur)	H	
Cedryl alcohol (Cedrol) and esters	H*	
Cinnamic acid and esters (cinnamates)	H*	
Ethyl a,b-epoxy-b-methyl*cinnamate*	H	
Cinnamyl alcohol and esters	H*	
Hydro*cinnamyl* alcohol and esters	H*	
Cinnamaldehyde	H*	
Citral (Geranial)	H*	
Citral dimethyl acetal	H*	
Citronellal	H*	
Hydroxy*citronellal*	H*	
Methoxy*citronellal*	H*	
Citronellol (Citronellyl alcohol)	H	
Citronellyl alcohol esters	H*	
Coumarin (Benz[a]pyrone)	H	
Hydro*coumarin*	H*	
Cresyl (Tolyl) esters and ethers	H*	
Cuminyl alcohol (Cuminol) and esters	H*	
Cyclamen aldehyde	H	
Cyclohexyl (Cyclohexanol) esters & ethers	H*	
Dihydromyrcenol	H*	
Diphenylmethane	H*	
Ethyl esters (cinnamate, crotonate, formate, hexanoate, myristate, propionate, etc.)	H*	
Eugenyl alcohol (Eugenol) and esters	H	
Fenchyl alcohol (Fenchol) and esters	H*	
Furfuryl alcohol esters	H*	
Furfuryl mercaptan and thioesters	H*	
Geranonitrile (Citralva)	H	
Geranyl alcohol (Geraniol) and esters	H	
Guaiacwood alcohol esters	H*	
Hexanoates (Hexanoic acid esters)	H*	See ACIDS, Hexanoic
Allyl hexanoate	H*	
Ethyl hexanoate	H*	
Hexenyl alcohol (Hexenol) esters	H*	
Hexyl alcohol (Hexanol) esters	H*	
Hydratropaldehyde	H*	
Hydratropic alcohol and esters	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Flavor & Fragrance chemicals (continued)		
a-Hexylcinnamaldehyde	H	
Indole	H*	
Ionone	H	
Methyl*ionone*s	H	
Isobutyl alcohol esters	H*	
Isopentyl(Isoamyl) alcohol esters	H*	
Isosafrole	H	
Isovaleric acid esters (isovalerates)	H*	
dl-Limonene (Dipentene)	H	
Linalyl alcohol (Linalool) and esters	H*	
dl-Menthol	H	
b-Myrcene	H	
p-Methylanisole	H*	
Methyl anthranilate	H*	
Methyl hexyl ketone (2-Octanone)	H*	See KETONES
Neryl alcohol (Nerol) and esters	H*	
Nonyl alcohol and esters	H*	
Nopol (Nopyl alcohol) and esters	H*	
Ocimenyl alcohol (Ocimenol) & esters	H*	
Octyl alcohol (Octanol) and esters	H*	
Phenethyl alcohol and esters	H*	See a-Methylbenzyl alcohol
Dimethyl*phenethyl* alcohol & esters	H*	
Methyl*phenethyl* alcohol and esters	H*	
Phenylacetic acid esters (phenylacetates)	H*	
Phenylethyl alcohol and esters	H*	
Pinane	H	
2-Pinanol	H	
Pine oil, synthetic	**G**	
a-Terpineol	H	
Dihydro*terpineol*	H*	
Terpinolene	H*	
a-Terpinyl esters	H*	
Pinene (alpha, beta)	H	
Piperonal (Heliotropin)	H	
Pyrones (e.g. Coumarin)	H	
Rhodinol (Citronellol + Geraniol)	H*	
Saccharin (Benzosulfimide)	H	
Salicylic acid esters (Salicylates)	H*	See Salicylic acid
Benzyl salicylate	H*	
Methyl salicylate	H	
Thymol	H*	
Tolyl(Cresyl) esters and ethers	H*	
Tricyclodecenyl alcohol and esters	H*	
Tricyclodecenyl propionate	H	
n-Undecanal	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Flavor & Fragrance chemicals (continued)		
2-Undecanone	H*	
n-Undecanal	H*	
2-Undecanone	H*	
Vanillin	H*	
Ethyl vanillin	H	
Vetivenyl alcohol (Vetivenol) & esters	H*	
Fluorocarbons (Freons)	->	See Chlorofluorocarbons
Formaldehyde	**F**	See ALDEHYDES. Three commercial forms: Formalin [hydrate (35-50% soln)]; Trioxane (cyclic trimer); and polymer (paraformaldehyde).
Formaldehydesulfoxylate, sodium	H	
Formate, sodium (Formic acid salt)	**G**	
Formic acid	H	See ACIDS
Furan (Furfuran)	H*	
bis(chlorendo)*furan*	H	Pesticide intermediate. See Chlorendic acid
Polytetrahydro*furan*	H*	See GLYCOLS.
Furfural (2-Furfuraldehyde)	H	
Furfuryl alcohol	H	See Flavors & Fragrances.
2-Furoyl chloride	H*	
2-**Furoic** acid and esters (furoates)	H*	
Glucoheptonic acid, sodium salt	H	
Glutamic acid, monosodium salt	X	Fermentation product.OCPSF not applicable (414.11e)
Glycerine, "synthetic"	**G**	
Glycerine, "natural" (from animal fats)	->	OCPSF not applicable (414.11d). Regulated by Part 417 and reported under SIC 2841.
Glyceryl esters of mixed fatty acids	[H]	See Fatty acid esters
Glycidol	H	
Glycidyl esters and ethers	H*	
Glycine	H	
Glycolic acid (Hydroxyacetic acid)	H	
Glycolonitrile (Hydroxyacetonitrile)	H	
GLYCOLS:		
Diethylene glycol	**G**	
Dipropylene glycol (1,1'-Oxydi-2-propanol)	**G**	
Ethylene glycol	**F**	
Neopentyl glycol (Dimethylpentanediol)	H*	See Diols
Polybutylene (Polyoxybutylene) glycol	**G**	
Polyether polyols:		
Polyethylene glycol (PEG)	**G**	Used in non-urethane products.
Polypropylene glycol (PPG)	**F**	Used in urethane products.
Polyglycerol (Glycerol ethoxylate)	H	
Polytetramethylene ether glycol (Poly*tetrahydrofuran*)	H*	See Furan
Propylene glycol	**G**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
GLYCOLS (continued):		
Tetraethylene glycol	H	
Triethylene glycol (Triglycol)	H	
Triethylene glycol dichloride	H*	
Tripropylene glycol	H	
GLYCOL **mono**ethers:		
Ethylene glycol, *monobutyl* **ether** (2-Butoxyethanol)	**G**	
Ethylene glycol, *monoethyl* **ether** (2-Ethoxyethanol)	**G**	
Ethylene glycol, *monohexyl* ether	H*	
Ethylene glycol, *monomethyl* **ether** (2-Methoxyethanol)	**G**	
Ethylene glycol, *monophenyl* **ether** (2-Phenoxyethanol)	**G**	
Ethylene glycol, *monopropyl* ether (2-Propoxyethanol)	H	
Diethylene glycol, *monobutyl* ether (2-[2-Butoxyethoxy] ethanol)	H	
Diethylene glycol, *monoethyl* **ether** (2-[2-Ethoxyethoxy] ethanol)	**G**	
Diethylene glycol, *monomethyl* **ether** (2-[2-Methoxyethoxy] ethanol)	**G**	
Diethylene glycol, *monophenyl* ether (2-[2-Phenoxyethoxy] ethanol)	H*	
Triethylene glycol, *monoethyl* ether (Ethoxytriglycol)	H	
Triethylene glycol, *monobutyl* ether (Butoxytriglycol)	H*	
Propylene glycol, *monoisobutyl* ether (1-Isobutoxy-2-propanol)	H*	
Propylene glycol, *monomethyl* ether (1-Methoxy-2-propanol)	H*	
Ethylene glycol, *diethyl* ether (1,2-Diethoxyethane)	H	
GLYCOL **di**ethers:		
Ethylene glycol, *dimethyl* **ether** (1,2-Dimethoxyethane)	**G**	
Ethylene glycol, *diphenyl* ether (1,2-Diphenoxyethane)	H	
Diethylene glycol, *diethyl* **ether** (bis[2-Ethoxyethyl] ether)	**G**	
Diethylene glycol, *dimethyl* **ether** (bis[2-Methoxyethyl] ether)	**G**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Triethylene glycol, *dimethyl* ether	H	
Polypropylene glycol, glycerol triether (Glycerol tri[Polyoxypropylene] ether)	H	
GLYCOL **poly**ethers:		
Polypropylene glycol, sorbitol polyether (Sorbitol polyoxypropylene ether)	H*	
GLYCOL esters:		
2-Butoxyethyl acetate	H	See Acetates
2-(2-Butoxyethoxy) ethyl acetate	H	See Acetates
Butylphthalyl butylglycolate (phthalate ester of 2-Butoxy ethanol)	H	See Phthalates
Diethylene glycol dibenzoate	H	See Benzoates
2-(2-Ethoxyethoxy) ethyl acetate	H	See Acetates
Ethylene glycol diacetate	H	See Acetates
2-Methoxyethyl acetate	H	See Acetates
Polypropylene glycol (polyol), polyester	H*	
Propylene glycol dibenzoate	H*	See Benzoates
Propylene glycol methyl ether acetate (1-Methoxy-2-propyl acetate)	H*	See Acetates
Propylene glycol, fatty acid monoester	H*	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Propylene glycol, monolaurate	H*	See Laurates
Triethylene glycol diacetate	H*	See Acetates
Tripropylene glycol diacrylate	H*	See Acrylates
Glyoxal	**G**	Textile finishing agent.
Glyoxal-Formaldehyde mixtures	H	Textile finishing agent.
Guanidines:		
Dodecyl*guanidine* acetate	H	
Guar derivatives	H	
Heptachlor epoxide	H	Pesticide intermediate – not regulated by Part 455.
n-**Heptane**	H	See Hydrocarbons C-7
Heptene	H	See Hydrocarbons C-7
Hexadecanoates (hexadecanoic acid esters)	->	See Palmitates
Hexadecanoic acid (Palmitic acid)	->	See Fatty acids, “natural” (from vegetable oils)
1-**Hexadecene**	H*	See Olefins (alpha)
Hexamethylene diamine	**G**	See AMINES, Hexanediamine
Hexamethylene glycol	H	See Diols
Hexamethyleneimine (Hexahydroazepin)	H	Used in rubber processing.
Hexamethylene tetramine	H	See AMINES
Hexamethylene glycol (1,6-Hexanediol)	H	See Diols
Hexamethylene biuret-urethane	H	Adhesive & sealant. Part 414 not applicable, if reported under SIC 2891 (414.11c).
n-**Hexane**	**G**	
Hexanoates (hexanoic acid esters)	H*	See Flavors & Fragrances
Hexanoic acid	H	See ACIDS, Carboxylic
1-**Hexene**	H*	See Olefins (alpha)

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
n-**Hexyl** chloride	H*	
Hydantoins	H	
1,3-Dibromo-5,5-dimethyl*hydantoin*	H*	
5,5-Dimethyl*hydantoin*	H*	
5-Ethyl-5-methyl*hydantoin*	H*	
Hydrazine	X	Inorganic chemical. May be regulated by Part 415, if reported under SIC 2819 (414.11d).
Hydrazine monoacetate	H	
Hydrazine monohydrate	X	Inorganic chemical
1,2-Diphenyl*hydrazine* (Hydrazobenzene)	H	See Benzene
Dimethyl*hydrazine*	H	
Diphenyl*hydrazine*	H	
Methyl*hydrazine*	H	
Phenyl*hydrazine*	H*	
Hydrocarbons C-4:		Petrochemical refinery products. May be regulated by
n-Butane (saturated C-4)	[**G**]	Part 419, if reported under SIC 2911 (414.11c).
1,3-Butadiene	[**F**]	Part 414 not applicable, if reported under SIC 2911.
Butylenes (mixed)	[**F**]	Part 414 not applicable, if reported under SIC 2911.
1-Butene	[**G**]	Part 414 not applicable, if reported under SIC 2911.
2-Butene (cis & trans)	[**G**]	Part 414 not applicable, if reported under SIC 2911.
Isobutylene	[**G**]	Part 414 not applicable, if reported under SIC 2911.
Hydrocarbons C-5 (concentrate)	[**G**]	Petrochemical refinery products. May be regulated by
Cyclopentadiene	[H]	Part 419, if reported under SIC 2911 (414.11c).
Isoprene (2-Methyl-1,3-butadiene)	[**G**]	Part 414 not applicable, if reported under SIC 2911.
Isopentane	[H]	Part 414 not applicable, if reported under SIC 2911.
n-Pentane	[**G**]	Part 414 not applicable, if reported under SIC 2911.
Pentenes (mixed)	[**G**]	Part 414 not applicable, if reported under SIC 2911.
1-Pentene	[**G**]	Part 414 not applicable, if reported under SIC 2911.
Hydrocarbons C-6:		Petrochemical refinery products. May be regulated by
Cyclohexane	[**F**]	Part 419, if reported under SIC 2911 (414.11c).
Cyclohexene	[**G**]	
n-Hexane	[**G**]	Part 414 not applicable, if reported under SIC 2911.
Methylcyclopentane	[H]	Part 414 not applicable, if reported under SIC 2911.
2-Methylpentane	[H]	Part 414 not applicable, if reported under SIC 2911.
Hydrocarbons C-7:		Petrochemical refinery products. May be regulated by
n-Heptane	[H]	Part 419, if reported under SIC 2911 (414.11c).
Heptene	[H]	Part 414 not applicable, if reported under SIC 2911.
Heptenes (mixed isomers)	[H*]	Part 414 not applicable, if reported under SIC 2911.
Methylcyclohexane	[H]	Part 414 not applicable, if reported under SIC 2911.
Hydrocarbons C-9 (concentrate)	[**G**]	Petrochemical refinery products. May be regulated by
Nonene (Propylene trimer)	[H]	Part 419, if reported under SIC 2911 (414.11c).
Napthenes (Cycloparaffins)	[H*]	Part 414 not applicable, if reported under SIC 2911.
n-Paraffins (C-8 to C-18)	[**G**]	Part 414 not applicable, if reported under SIC 2911.

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Hydroperoxides:		
tert-Butyl hydroperoxide	H*	
Cumene hydroperoxide	**G**	
Dihydroterpinyl hydroperoxide (*p*-Methan-8-hydroperoxide)	H	
2,5-Dimethylhexane-2,5-di*hydroperoxide*	H*	
Peracetic acid (Acetyl hydroperoxide)	H	See Acetic acid
Pinane hydroperoxide	H	
Hydroquinone	H	
2-Chloro*hydroquinone*	H	
2,5-Di-tert-butyl*hydroquinone*	H*	
Imidazole	H*	
1,1-Carbonyldi*imidazole*	H*	
2-Ethyl-4-methyl*imidazole*	H	
Indene (Indonaphthene)	H**	
Isatoic anhydride	H	
Isobutanol (Isobutyl alcohol)	**G**	See ALCOHOLS
Isobutylene	**G**	See Hydrocarbons C-4
Isobutylene **Oligomers**:		
Diisobutylene (dimer)	H	
Triisobutylene (trimer)	H	
Isobutyraldehyde	**G**	See ALDEHYDES
Isobutyrates (isobutyric acid esters):		
Isobutyl isobutyrate	H*	
Phenoxyethyl isobutyrate	H	
Isobutyric acid	H*	See ACIDS carboxylic
a-Hydroxy*isobutyric* acid	H*	
Isocyanates:		
p-Chlorophenyl*isocyanate*	H	
Cyclohexyl isocyanate	H*	
3,4-Dichlorophenyl isocyanate	H*	
Hexyl-1,6-di*isocyanate* (Hexamethylene diisocyanate)	H	
Methylene bis(4-phenyl*isocyanate*) MDI	**G**	
Methyl*isocyanate* (MIC)	H	
Phenyl iso*thio*cyanate	H**	
PAPI (Polymeric MDI)	**G***	See Methylenebis-
Tolylene di*isocyanate*s (TDI), mixed	**G**	
Isocyanurates (isocyanuric acid esters):	H	
Dichloro*isocyanurate*, sodium (Dichloro-s-triazine-2,4,6[1H,3H,5H]-trione, salt)	H*	
Isocyanuric acid		See Cyanuric acid (tautomer of isocyanuric acid)
(s-triazine-2,4,6[1H,3H,5H]-trione)	**G***	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Trichloro*isocyanuric* acid (Trichloro-s-triazine-2,4,6[1H,3H,5H]-trione)	[H*]	Used in pesticide applications. May be regulated by Part 455, if reported under SIC 2879 (414.11d).
Isophorone	**G**	See KETONES
Isophthalates (isophthalic acid esters):		
Diphenyl isophthalate	H*	
Isophthalic acid	**G**	
Isophthalonitrile	H*	
Isophthaloyl chloride	H	
Isoprene	**G**	See Hydrocarbons C-5
Isopropanol (Isopropyl alcohol)	**F**	See ALCOHOLS
Hexafluoro*isopropanol*	H*	
Isopropyl acetate	**G**	See Acetates
Isopropyl chloride	H	
Isovalerone (Diisobutyl ketone)	H*	See KETONES
Ketene	H	
Di*ketene*	H	
KETONES:		
Acetone	**F**	
Acetophen*one*	H	See Flavors & Fragrances
Benzophen*one* (Diphenyl ketone)	H*	See Flavors & Fragrances
Diisoamyl ketone	H*	
Diisobutyl ketone (Isovalerone)	H*	
Endrin ketone	H	
2-Heptan*one* (Methyl amyl ketone)	H	
1,1,1,3,3,3-Hexafluoro-2-propan*one*	H	
2-Hexan*one* (Methyl butyl ketone)	H	
Isophor*one*	**G**	
Methyl tert-butyl ketone (3,3-Dimethyl-2-butanone)	H*	
Methylcyclohexan*one*	H	
Methyl ethyl ketone (MEK)	**G**	
Methyl hexyl ketone	H*	See Flavors & Fragrances
5-Methyl-3-heptan*one*	H	
Methyl isoamyl ketone (MIAK)	H*	
Methyl isobutyl ketone (MIBK)	**G**	
Methyl isobutenyl ketone	H	See Mesityl oxide
Michler's ketone	H	See Dyes
Pentanone	H*	
Propiophen*one* (Phenylethyl ketone)	H*	
Lactic acid (2-Hydroxy*propionic* acid)	H	See ACIDS
Lactates (Lactic acid esters):		
Myristyl lactate	H*	
Laurates (Lauric acid esters):		
Propylene glycol mono*laurate*	H*	See GLYCOL Esters
Lauric acid	H	See ACIDS, Dodecanoic

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Lauroyl (*dodecan*oyl) chloride	H*	
Lauryl alcohol	H*	See ALCOHOLS, Dodecanol
Laurylsulfonate, sodium	[H]	Surface active agents. May be regulated by Part 417,
Lauryl alcohol sulfate	[H]	if reported under SIC 2843 (414.11c).
Lignosulfonic acid (Lignosulfate)	X	Byproduct of the wood pulping process, but not regulated by Part 430.
Lignin sulfonic acid, Calcium salt	[**G**]	Surface active agents. May be regulated by Part 417,
Lignin sulfonic acid, Fe-Cr salt	[H]	if reported under SIC 2843 (414.11c).
Lignin derivatives	[H]	
Lutidines (Dimethylpyridines)	H*	See Pyridines
Maleates (Maleic acid esters):		
Diallyl maleate	H*	
Di-n-butyl maleate	H*	Used as a plasticizer in plastic products.
Di(2-ethylhexyl) maleate	H*	Used as a plasticizer in plastic products.
Maleic acid	H	See ACIDS, Dicarboxylic
Maleic anhydride	**G**	
Alkyl*maleic* anhydride	H	
Maleic hydrazide	H	
Mannitol	H	
Melamine (2,4,6-Triamino-s-*triazine*)	**G**	See AMINES
p-**Menthane** (1-Isopropyl-4-methylcyclohexane)	H*	See Cyclohexane
MERCAPTANS (thiols):		
Amyl mercaptan	H	
Butyl mercaptan	H*	
Cyclohexyl mercaptan	H*	
Dodecyl mercaptan	H	Used in rubber processing.
1,2-Ethanedi*thiol*	H*	
Ethyl*mercaptan*	H*	
Hexadecyl mercaptan	H*	
2-Hydroxyethyl mercaptan	H*	
Isopropyl mercaptan	H*	
Methyl mercaptan	H*	
tert-Nonyl mercaptan	H*	
Octadecyl mercaptan	H*	
n-Octyl mercaptan	H*	Used in rubber processing.
tert-Octyl mercaptan	H*	
Perchloromethyl mercaptan	H	
Propyl mercaptan	H*	
Tetradecyl mercaptan	H*	Used in rubber processing.
Tridecyl mercaptan	H*	
2,4,4-Trimethyl-2-pentane*thiol*	H*	See Trimethylpentane
Mercaptoacetic acid	H**	
Mercaptoacetates (esters)	H**	
Mercapto*benzothiazoles*	H*	See Benzothiazoles
Mercaptopropionic acids	H**	
Mercapto*propionate*s (esters)	H**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Mesityl aldehyde	H*	
Mesityl oxide	H	See KETONES
Mesitylene (1,3,5-Trimethylbenzene)	H*	
Metal Alkyls:		See Organo-Metallics
Dimethylzinc	H*	
Tetraethyl lead (TEL)	**G**	Production restricted since the mid 70's
Tetramethyl lead (TML)	**G**	by phase out of leaded gasoline.
Tributylaluminum	H*	
Triethylaluminum	H	
Triethyl borane	H*	
Trimethylaluminum	H*	
Trimethylgallium	H*	
Metanilic acid	**G**	
Methacrylates (Methacrylic acid esters):		
Allyl methacrylate	H*	
n-Butyl methacrylate	H*	
Cyclohexyl methacrylate	H*	
Diethylene glycol di*methacrylate*	H*	
2-Ethylhexyl methacrylate	H*	
n-Hexyl methacrylate	H*	
Isobornyl methacrylate	H*	
Isobutyl methacrylate	H*	
Isodecyl methacrylate	H*	
Isopropyl methacrylate	H*	
Lauryl (Dodecyl) methacrylate	H*	
Methyl methacrylate (MMA)	**G**	
Neopentyl glycol di*methacrylate*	H*	
Stearyl methacrylate	H*	
Tetraethylene glycol di*methacrylate*	H*	
Tetrahydrofurfuryl methacrylate	H*	
Methacrylamides	H	
Dimethylaminopropyl methacrylamide	H	
Methacrylic acid	**G**	
Methallyl chloride	H	
Methane	**G**	
Chloro*methane* (Methyl chloride)	**G**	
bis(2-Chloroethoxy) methane	H	See ETHERS, Chloroalkyl
Chlorofluoro*methane*s	->	See Chlorofluorocarbons
Diphenyl*methane*	H*	See Flavors & Fragrances
Iodo*methane* (Methyl iodide)	H*	
Nitro*methane*	H	
Trichloronitro*methane* (Chloropicrin)	X	Pesticide active ingredient. Regulated by Part 455 and reported under SIC 2879 (414.11d).
Trifluoro*methane*	H*	
Methanol	**F**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Methionine	X	Medicinal chemical. Regulated by Part 439 and reported under SIC 2833 (414.11d).
2-Methoxyethanol	**G**	See GLYCOLS monoethers
2-(2-Methoxyethoxy) ethanol	**G**	See GLYCOLS monoethers
bis(2-Methoxyethyl) ether	**G**	See GLYCOLS diethers
Methyl acrylate	**G***	See Acrylates
Methylal (Dimethoxymethane, formal)	H	
Methylamines:	**G**	
Di*methylamine*	**G**	See AMINES
Methylamine	**G***	See AMINES
Tri*methylamine*	**G**	See AMINES
Methylates:		
Magnesium methylate	H	
Sodium *methylate* (caustic methanol)	H	
a-**Methylbenzyl** alcohol (Styralyl)	H*	See Flavors & Fragrances
Methyl bromide	H	
Methyl *tert*-butyl ether (MTBE)	**G**	See ETHERS
Methylbutynol	H	See Acetylenic Alcohols
Methyl chloride (Chloromethane)	**G**	See Methane
Methyl chloroform (1,1,1-Trichloroethane)	**G**	See Chloroethylenes
Methylcyclohexane	H	See Hydrocarbons C-7
Methylcyclohexanol	H	
Methylcyclopentane	H	See Hydrocarbons C-6
Methyl ethyl ketone (MEK)	**G**	See KETONES
Methyl ethyl ketone oxime	H*	
Methyl formate	H	
Methyl iodide (Iodomethane)	H	
Methyl isobutyl ketone (MIBK) (5-Methyl-2-hexanone)	**G**	See KETONES
Methyl methacrylate (MAA)	**G**	See Methacrylic acid
2-Methylpentane	H	See Hydrocarbons C-6
2-Methyl-1-pentanol	H	
4-Methyl-2-pentanol	H	
Methylpentynol	H	See Acetylenic alcohols
α-Methylstyrene	**G**	
tert-Amyl-a-*methylstyrene*	H	
Methylene chloride (Dichloromethane)	**G**	
Methylene dianiline (MDA)	**G**	
4,4'-Methylenebis (N,N-dimethylaniline)	**G**	See Methylenebis-
Polymeric MDA (oligomers)	**G**	
Methylenediphenyldiisocyanate (MDI) (Methylenebis[4-phenylisocyanate])	**G**	See Isocyanates, Methylenebis-
Polymethylene polyphenyleneisocyanate (PAPI, Polymeric MDI)	**G***	See Isocyanates

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Methylenebis-		
4,4'-Methylenebis (dianiline)	**G**	See Methylene dianiline
4,4'-Methylenebis(N,N-dimethylaniline)	**G**	See Methylene dianiline
4,4'-Methylenebis(3-hydroxy-2-naphthalenecarboxylic acid)	H*	See Naphthalene (Pamoic acid)
2,2'-Methylenebis(6-tert-butyl-p-cresol)	H*	Used in rubber processing
2,2'-Methylenebis[6-(1-methyl-cyclohexyl)-p-cresol]	H*	Used in rubber processing
Methylenebis thioacetic acid	H**	
Methylenebis thiocyanate	H**	
Methylenebis thiopropionic acid	H**	
Morpholine	H	
Morpholine disulfide	H*	Used in rubber processing.
4-*Morpholin*yl-2-benzothiazyl disulfide	H*	Used in rubber processing.
Myristates (Myristic acid esters)	[H*]	See Fatty acid esters. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Isopropyl myristate	[H*]	Used as a plasticizer.
Methyl myristate	[H*]	
Myristyl myristate	[H*]	
Myristic acid	->	See Fatty Acids.
Myristyl alcohol	H*	See ALCOHOLS: Tetradecanol
Nadic anhydride	H*	
7-Methyl*nadic* anhydride	H	
Naphthas, solvent	->	See Solvents
Naphthalene	**G**	See Coal tar products
Methyl*naphthalene*	H	See Coal tar products
Bromo*naphthalene*	H	
Chloro*naphthalene*s	H	
1-Chloromethyl*naphthalene*	H*	
2-Chloro*naphthalene*	H	
Pentachloro*naphthalene*	H	
3-Hydroxy-2-*naphthalene* carboxamide	H	
3-Hydroxy-2-*naphthalene*carboxylic acid	H	
4,4'-Methylenebis (3-hydroxy-2-*naphthalene*carboxylic acid)	H*	Pamoic acid. See Methylenebis-
1,4,5,8-Naphthalene tetracarboxylic acid	H*	
α-Naphthol (1-Hydroxy*naphthalene*)	H	
β-Naphthol (2-Hydroxy*naphthalene*)	H	
1-Nitro*naphthalene*	H	
Poly*naphthalene* sulfonate, Sodium	H	
1,2,3,4-Tetrahydro*naphthalene*	H	See Tetralin
2-Naphthalenesulfonic acid (beta)	**G**	
1-Naphthalenesulfonic acid (alpha)	H	
Naphthalenesulfonic acid-formaldehyde condensates	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Tetrahydro*naphthalene*sulfonic acid	H*	
Naphthenic acids (Cyclopentanecarboxylic acids)	->	Petrochemical refinery product. May be regulated by Part 419, if reported under SIC 2911 (414.11c).
Naphthenates (Naphthenic acid salts)	H	
Calcium, Cobalt, Zinc naphthenates	H*	
Copper, Lead naphthenates	H	
Naphthoic acid (Naphthalene carboxylic acid)	H*	See Naphthalene
Napthoates (Napthoic acid esters)	H*	
Neopentyl glycol	H*	See GLYCOLS, Diols
Dibromo*neopentyl* glycol	H	
Nitriles:		
Aceto*nitrile*	H	
Ethylenediaminetetra*acetonitrile*	H*	See Ethylenediamine
Iminodi*acetonitrile*	H*	
Benzo*nitrile*	H**	
n-Butyro*nitrile*	H	
Fatty nitriles	[**G**]	Surface active agents. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Isobutyro*nitrile*	H*	
Succino*nitrile*	H	
Nitrilotriacetic acid (NTA)	**G**	See Acetic acid, Chelating Agents
Nitrites:		
n-Butyl*nitrite*	H**	
Isoamyl*nitrite*	H**	
Isobutyl*nitrite*	H**	
Nitroanilines, mixed	**G**	See Aniline
2-Bromo-4,6-di*nitroaniline*	H	Used as a dye intermediate
2,6-Dibromo-4-*nitroaniline*	H*	Used as a dye intermediate
2,6-Dichloro-4-*nitroaniline* (DCNA)	[H*]	Pesticide active ingredient. Regulated by Part 455 and reported under SIC 2879 (414.11c).
p-Nitroaniline	H	See Aniline
o-, *m*-Nitroaniline	H*	See Aniline
Nitrobenzene	**G**	
o-, *p*-, *m*-Di*nitrobenzene*	H	
Chloro*nitrobenzenes*	->	See Chloronitrobenzenes
Nitrophenols:		
p-Nitrophenol (4-Nitrophenol)	**G***	Pesticide intermediate. Not regulated by 40 CFR 455.
o-Nitrophenol (2-Nitrophenol)	H	
2-Amino-4-nitrophenol	H	
2-Chloro*nitrophenol*	H	
2,4,6-Tri*nitrophenol* (Picric acid)	H	
Nitrosamines:		
Di*nitroso*pentamethylenetet*ramine*	H	Used in rubber processing.

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Nitrosamines (continued):		
N-*Nitroso*diphenyl*amine*	H	See Diphenylamine. Used in rubber processing.
Nitrotoluenes:		
o,p-Nitrotoluene	**G**	
m-Nitrotoluene	H*	
4-Nitrotoluene-2-sulfonic acid	H	
Di*nitrotoluene*s, mixed	**G**	See Dinitrotoluene
2,4-Dinitrotoluene	**G**	
2,6-Dinitrotoluene	**G**	
Nonene, non-linear (Propylene trimer)	[H]	See Hydrocarbons C-9
1-Nonene, linear	[H]	See Olefins, alpha
Nonenes (mixed isomers)	[H]	See Olefins, alpha
Nonylphenol	**G**	See Phenol
2,4-Di*nonylphenol*	H*	
Nylon salt	**G**	
Olefins, alpha (C6-C10, C11 & higher)	[**G**]	Petrochemical refinery products. May be regulated by Part 419, if reported under SIC 2911 (414.11c).
Linear ethylene **oligomers**:		
1-Dodecene (C-12)	[H]	
1-Eicosene (C-20)	[H*]	
1-Heptene (C-7)	[H*]	
1-Hexene (C-6)	[H*]	
1-Hexadecene (C-16)	[H*]	
1-Nonene (C-9)	[H]	
1-Octene (C-8)	[H*]	
1-Tetradecene (C-14)	[H*]	
Olefins (alpha), epoxidized	H	
Poly alpha olefins (PAO)	H*	
Oleamide	[H*]	See Fatty amides
Oleates (Oleic acid esters & salts)	[H*]	See Fatty acid esters
n-Butyl oleate	H*	Used as a plasticizer in plastic products.
n-Decyl oleate	H*	
Glyceryl mono-oleate	H*	Used as a plasticizer in plastic products.
Glyceryl tri*oleate*	H*	Used as a plasticizer in plastic products.
Methyl oleate	H*	
n-Propyl oleate	H*	Used as a plasticizer in plastic products.
Propyleneglycol mono-oleate	[H*]	Surface active agents. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Sorbitan oleate, ethoxylated (Sorbitol mono*oleate*)	[H]	Surface active agent
Oleic acid	H	See Fatty Acids
Organometallics	->	See Metal alkyls
Organo-Tin compounds	X	Pesticide active ingredients. Regulated by Part 455 and reported under SIC 2879 (414.11d).
Triorganotin compounds	X	
Organo-Phosphorus chlorides	->	See Benzene
Oxalates (Oxalic acid esters & salts):		
Ammonium oxalate	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Oxalates (continued)		
Ethyl oxalate	H	
Oxalic acid	**G**	See ACIDS, Dicarboxylic
Oxo process organic chemicals		
Oxo Acids:		
2-Ethylhexanoic acid	H	
Heptanoic acid (Enanthic acid)	H*	
Neodecanoic acid	H*	
Neoheptanoic acid	H*	
Neopentanoic acid (Pivalic acid)	H	
Pelargonic acid (Nonanoic acid)	H	
Propionic acid	**G**	
n-Valeric acid (Pentanoic acid)	H*	
Oxo Alcohols:		
n-Amyl alcohol (n-Pentanol)	H	
n-Butanol	**G**	
2-Ethylhexanol	**G**	
2-Hexanol	H*	
2-Heptanol	H*	
Isoamyl (Isopentyl) alcohol	H	
Isobutanol	**G**	
Isodecanol (Isodecyl alcohol)	H	
Isononanol (Isononyl alcohol)	H*	
Iso-octanol (Isooctyl alcohol)	H	
Neopentyl glycol	H*	
n-Propanol	**G**	
1-Tridecanol (C-13)	H*	
Trimethylolpropane	H	
Oxo Aldehydes:		
n-Butyr*aldehyde*	**G**	
2-Ethylhex*aldehyde*	H*	
Isobutyr*aldehyde*	**G**	
Propion*aldehyde*	**G**	
n-Valer*aldehyde*	H	
Palmitates (Palmitic acid esters)	H*	See Fatty acid esters
Isopropyl palmitate	H*	Used as a plasticizer in plastic products.
Methyl palmitate	H*	
Propylene glycol mono*palmitate*	[H*]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Palmitic acid	H*	
Palmitoyl chloride	H*	
Pamoic acid	H*	See Methylenebis-. See Naphthalene.
(4,4'-Methylenebis-[3-hydroxy- 2-naphthalene carboxylic acid])		
Pamoate, diSodium	H*	
n-**Paraffin**s (C-8 to C-18)	[**G**]	See Hydrocarbons

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Pentachlorophenol (PCP) and metal salts	X	Pesticide active ingredient. Regulated by Part 455 and reported under SIC 2879 (414.11d).
Pentaerythritol (Tetramethylol methane)	**G**	
Tri*pentaerythritol*	H*	
n-Pentane	[**G**]	See Hydrocarbons C-5.
Pentenes, mixed	[**G**]	See Hydrocarbons C-5
1-Pentene	[**G**]	See Hydrocarbons C-5
Di*pentene* (*d,l*-Limonene)	H*	See Flavors & Fragrances
Perchloroethylene (tetrachloroethylene)	**G**	See Chloroethylenes
Peroxides:		
Acetyl (Diacetyl) peroxide	H	
Benzoyl peroxide	H	
Di-tert-butyl peroxide	H	
Dicumyl peroxide	H*	
bis(α,α-Dimethylbenzyl) peroxide	H	
2,5-Dimethyl-2,5-di-(tert-butyl*peroxy*)hexane	H	See Dimethylhexanes
2,5-Dimethyl-2,5-di (tert-butyl*peroxy*)-hex-3-yne	H	See Dimethylhexanes
Lauroyl (Dilauroyl) peroxide	H*	
Methyl ethyl ketone peroxide	H	
2,4-Pentanedione peroxide (Acetylacetone peroxide)	H	
Succinic acid peroxide	H*	
Peroxycarbonates:		
tert-Butyl *peroxy*isopropyl carbonate	H*	
Di-sec-Butyl *per[oxy]*dicarbonate	H*	
Di(2-ethylhexyl) peroxydicarbonate	H	
Di-n-Propyl*peroxycarbonate*	H*	
Peroxyesters	H	
tert-Butyl peroxyacetate	H*	
tert-Butyl peroxybenzoate	H	
tert-Butyl peroxyisobutyrate	H*	
tert-Butyl peroxypivalate	H	
a-Cumyl peroxyneodecanoate	H*	
2,5-Dimethylhexane-2,5-diperoxy(2-ethylhexanoate)	H*	
Perylene tetracarboxylic acid diimide	H	
Petroleum sulfonates, metal salts	**G**	Surface active agent. Part 414 not applicable, if previously reported under SIC 2843 (414.11c).
Phenethyl alcohol esters	->	See Flavors & Fragrances
o-, p-**Phenetidine** (o-, p-Ethoxyaniline)	H	Used as a dye intermediate
Phenol	**F**	
Alkyl*phenol*s, mixed	**G**	
Amyl*phenol*	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Phenols (continued):		
p-Anilino*phenol*	H*	Used in rubber processing.
p-Benzyloxy*phenol*	H	
o-sec-Butyl*phenol*	H*	
p-tert-Butyl*phenol*	**G**	
2,4-Di-tert-pentyl*phenol*	H*	
p-Dodecyl*phenol*	H	
o, *p*-Isopropyl*phenol*	H	
p-Methoxy*phenol* (Hydroquinone diether)	H*	
p-Nitroso*phenol* (p-Quinone oxime)	H*	
Nonyl*phenol*	**G**	
Octyl*phenol*	H	
tert-Pentyl*phenol*	H*	
Phenolate, sodium (Sodium phenate)	H	
Phenolsulfonic acids	H	
Phenol, styrenated	H*	Used in rubber processing.
2-**Phenoxy**ethanol	**G**	See GLYCOL monoethers
Phenylacetic acid, potassium salt	H	See Flavors & Fragrances
4-Methoxy*phenylacetic* acid	H*	
Phenylacetyl chloride	H	
Phenylenediamines	->	See AMINES
m-, *p*-Phenylenediamine	H	
o-Phenylenediamine	**G**	
N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine	H*	Used in rubber processing.
N,N'-Bis(1-methylheptyl)-p-phenylenediamine	H*	Used in rubber processing.
N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine	H*	Used in rubber processing.
N,N'-Diphenyl-p-phenylenediamine	H	Used in rubber processing.
N-Isopropyl-N'-phenyl-p-phenylenediamine	H*	Used in rubber processing.
m-Nitro-p-phenylenediamine	H*	
4-Nitro-o-phenylenediamine	H	
Phenylethyl alcohol and esters	->	See Flavors & Fragrances
Phenylethyl bromide	H*	
Phosgene	**G**	
Phosphate, tri-organo esters:		
Cresyldiphenyl phosphate	H	
Di(2-ethylhexyl) phosphate (Di[2-Ethylhexyl]phosphoric acid)	H*	
p-Nitrophenyl phosphate	H*	
Phenyl phosphate	H*	
Phosphate esters of ethoxylated alcohols	H*	Surface active agents. May be regulated by Part 417, if reported under SIC 2843 (414.11c).

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Phosphate, tri-organo esters (continued):		
Thiamine pyrophosphate	X	Medicinal chemical (Vitamin). Regulated by Part 439 and reported under SIC 2833 (414.11d).
Tri(2-butoxyethyl) phosphate	H*	Used as a plasticizer in plastic products.
Tri-n-butyl phosphate	H*	Used as a plasticizer in plastic products.
Tri(4-bromophenyl) phosphate	H	
Tri(2-chloroethyl) phosphate	H	Used as a plasticizer in plastic products.
Tri-p-cresyl phosphate (tri-p-Tolyl phosphate)	H	
Tri(2,3-dibromopropyl) phosphate	H	
Tri(2,3-dichloropropyl) phosphate	H	Used as a plasticizer in plastic products.
Tri(2-ethylhexyl) phosphate	H*	Used as a plasticizer in plastic products.
Tri(2,4,6-tribromophenyl) phosphate	H	
Tri(2-ethylhexyl) phosphate	H	
Tri(isopropylphenyl) phosphate	H	
Triphenyl phosphate	H	
Phosphines:	H	
1,2-bis(Diphenyl*phosphino*) ethane	H*	
Diphenylcyclohexyl phosphine	H*	
Phosphinic acids:		
Benzene phosphinic acid	H*	
Diphenyl phosphinic acid	H*	
Phosphites (Phosphorous acid esters):		
Diphenyl phosphite	H**	
Diphenyl isodecyl phosphite	H**	
Diphenyl iso-octyl phosphite	H**	
Diphenyl nonyl phosphite	H**	
Tetraphenyl (dipropylene glycol) phosphite	H**	
Tridecyl phosphite	H**	
Tri(2-ethylhexyl) phosphite	H**	
Trimethyl phosphite	H**	
Tri(nonylphenyl) phosphite	H**	Used in rubber processing.
Phosphonic acid esters (phosphonates)		
Benzene phosphonic acid	H*	
bis(2-Chloroethyl)-1-hydroxyethyl phosphonic acid	H	
bis(2-Chloroethyl)vinyl phosphonate	H	
Diethyl 2-bromoethyl phosphonate	H	
Diethyl 2-hydroxyethyl phosphonate	H	
Dimethyl methylphosphonate	H*	
Dipolyoxyethylene hydroxymethyl phosphonate	H*	
Ethyl phosphonic acid	H*	
Ethyl phosphonic dichloride	H*	
Ethyl phosphono*thio*ic dichloride	H	
2-Hydroxyethyl-1,1-diphosphonic acid	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Phosphonic acid esters (continued)		
Nitrilotris(methylene) triphosphonic acid	H	
Triethylphosphonoacetate	H*	
Phosphonium salts:		
Tetrabutyl phosphonium silanate	H	
Tetrabutyl phosphonium salts	H*	
Tetrakis(Hydroxymethyl)-phosphonium bromide	H	
Tetrakis(Hydroxymethyl)-phosphonium chloride	H	
Tetrakis(Hydroxymethyl)-phosphonium hydroxide	H	
Tetrakis(Hydroxymethyl)-phosphonium sulfate	H	
Phosphorodithioic acid esters:		
O,O-Diethyl *phosphoro*chlorido*dithioate* (Diethylchlorothiophosphate)	H*	Pesticide intermediate. OCPSF is applicable. Not regulated by 40 CFR 455.
Diethyl phosphorodithioic acid	H*	Pesticide intermediate. OCPSF is applicable.
O,O-Dimethyl *phosphoro*chloro*dithioate*	H*	Pesticide intermediate. OCPSF is applicable.
Dimethyl phosphorodithioic acid	H*	Pesticide intermediate. OCPSF is applicable.
Di-n-propyl*phosphoro*chlorido*thioate*	H*	Pesticide intermediate. OCPSF is applicable.
Di-n-propyl*phosphorodithioic* acid	H*	Pesticide intermediate. OCPSF is applicable.
Phosphorotrithioic acid, S,S,S-tributyl ester (DEF)	X	Pesticide active ingredient. Regulated by Part 455 and reported under SIC 2879 (414.11d).
Phthalates (Phthalic acid esters):		Used as a plasticizer in plastic products.
Phthalates, **one-alcohol**:		
Diallyl phthalate	H*	
Di-n-butyl phthalate	**G**	
Dicyclohexyl phthalate	H	
Diethyl phthalate	H	
Di(2-Ethylhexyl) phthalate	G	
Diisobutyl phthalate	**G**	
Diisodecyl phthalate	**G**	
Diisononyl phthalate	H	
Diiso-octyl phthalate	**G**	
Di-n-hexyl phthalate	H	
Di(2-Methoxyethyl) phthalate	H	
Dimethyl phthalate	**G**	
Di-n-octyl phthalate	H	
Diphenyl phthalate	H	
Ditridecyl phthalate	**G**	
Phthalates, **two-alcohol**:		
Butyl, benzyl phthalate	H	Used as a plasticizer in plastic products.
Butyl, octyl phthalate	**G**	
Butylphthalyl butylglycolate	H	See GLYCOL Esters
Decyl, isononyl phthalate	H	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Phthalates, **two-alcohol** (continued):		
Decyl, octyl phthalate	H	
2-Ethylhexyl, hexyl phthalate	H	
Phthalates, **mixed-alcohol**:	H	
2-Ethylhexyl, hexyl, isodecyl phthalate	H	
Heptyl, nonyl, undecyl phthalate	H	
Hexyl, heptyl, nonyl, undecyl phthalate	H	
Phthalic acid	**G**	
4-Methyl*phthalic* acid	H*	
Phthalic anhydride	**G**	
Hexahydro*phthalic* anhydride (1,2-Cyclohexanedicarboxylic anhydride)	H	
4-Methyl*phthalic* anhydride	H*	
Tetrabromo*phthalic* anhydride	H	
Tetrachloro*phthalic* anhydride	H	
Tetrahydro*phthalic* anhydride	H	
Phthalimide	H	
Tetrahydro*phthalimide*	H*	
Phthalocyanines	->	See Pigments
Phthaloyl chloride	H	
Picolines (methylpyridines)	H	See Pyridine
2-Picoline	H	
Picric acid (2,4,6-Trinitrophenol)	H	See Nitrophenols
Pigments, organic	H	
Blue 1 (Victoria blue)	H*	
Pigment Blue 15 (a & b forms) (Copper phthalocyanine blue)	H	
Brown 5 (Monoazo brown)	H*	
Drug and cosmetic colors	H*	
Fluorescent pigments	H*	
Food, drug and cosmetic colors	H*	
Green 1 (Brilliant green)	H*	
Pigment Green 7 (Copper phthalocyanine green)	H	
Green 36 (Phthalo green [Cl,Br])	H*	
Orange 5 (Dinitraniline orange)	H*	
Orange 13 (Pyrazolone orange)	H*	
Orange 16 (Dianisidine orange)	H*	
Orange 34 (Diarylide orange)	H*	
Orange 46 (Ethyl red lake C)	H*	
Red 3 (Toluidine red)	H*	
Red 4 (Orthochlor red)	H*	
Red 17 (Naphthol red medium)	H*	
Red 23 (Naphthol red dark)	H*	
Red 48 (Permanent red)	H*	
Red 49 (Lithol red, salt)	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Pigments, organic (continued):		
Red 52 (Red 2G, salt)	H*	
Red 53 (Red Lake C, salt)	H*	
Red 57 (Lithol rubine, salt)	H*	
Red 81 (Rhodamine Y)	H*	
Red 112 (Naphthol red FGR)	H*	
Violet 1 (Rhodamine B)	H*	
Violet 19 (Quinacridone violet)	H*	
Red 112 (Naphthol red FGR)	H*	
Violet 1 (Rhodamine B)	H*	
Violet 19 (Quinacridone violet)	H*	
Violet 23 (Dioxazine violet)	H*	
Yellow 1 (Hansa yellow G)	H*	
Yellow 3 (Hansa yellow 10G)	H*	
Pigment Yellow 12 (Diarylide yellow AAA)	H	
Yellow 13 (Diarylide yellow AAMX)	H*	
Yellow 14 (Diarylide yellow AAOT)	H*	
Yellow 17 (Diarylide yellow AAOA)	H*	
Yellow 74 (Hansa yellow 64)	H*	
Yellow 83 (Diarylide yellow HR)	H*	
Pinane	H	See Flavors & Fragrances
Pinane hydroperoxide	H	See Hydroperoxides
Pine oil, "synthetic"	**G**	See Flavors & Fragrances
Pine oil, "natural"	X	Solvent extracted from pine wood stumps (414.11e). Regulated by Part 454 and reported under SIC 2861.
Pinene	H	See Flavors & Fragrances
Piperadine (Hexahydropyridine)	H*	
Piperazine (Diethylene diamine)	H	See Ethylene diamine
N-Aminoethyl*piperazine*	H*	
N-Methyl*piperazine*	X*	Medicinal chemical. Regulated by Part 439 and
Piperylene (1,3-Pentadiene)	H*	reported under SIC 2833 (414.11d).
Pitch Tar residues	->	See Coal tar products
Pivalic acid (Neopentanoic acid)	H	See ACIDS and Oxo Acids
Pivaloyl chloride	H*	
Polyacrylic acid	->	See Acrylic acid. Regulated in Part 414 as a PLASTIC,
Polyacrylate, sodium	H*	but considered an organic chemical in commerce.
Polybenzylalkylbenzenes	H	
Polyethylbenzene (polybenzyl aromatics)	H	
Polyether polyols	->	See GLYCOLS
Polybutylene glycol	**G**	See GLYCOLS
Polyethylene glycol (PEG)	**G**	See GLYCOLS
Polypropylene glycol (PPG)	**F**	See GLYCOLS
Polyisoprene solution	[H]	Rubber sealant. Part 414 is not applicable, if reported under SIC 2891 (414.11c).

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Polymeric MDA	**G**	See Methylenedianiline
Polymeric MDI	**G***	See Methylenediphenyldiisocyanate
Polymeric plasticizers (complex linear polyesters)	H**	Used as a plasticizer in plastic products.
Polysulfide polyether	[H]	Rubber sealant. Part 414 is not applicable, if reported under SIC 2891 (414.11c).
Polyphosphates, chlorinated	X	Fertilizer chemicals. OCPSF not applicable (414.11d)
Potassium pyrophosphate	X	Fertilizer chemical. Regulated by 40 CFR 418 and reported under SIC 2874.
Polyvinyl pyrrolidinone	H	
Polyvinyl pyrrolidinone Ionophore (Crown polyether)	H	
Quaternized complex ether	H	
Propane	**G**	
Nitro*propane*	H	
1,2,3-Trichloro*propane*	H*	
Propanol (n-Propyl alcohol)	**G**	See ALCOHOLS
2-Chloro*propanol* (Propylene chlorohydrin)	H	See Chlorohydrins
2,3-Dibromo*propanol*	H	
2,3-Dichloro*propanol* (Dichlorohydrin)	H	See Chlorohydrins
1-(Dimethylamino)-2-*propanol*	H*	
2-Methyl-2-nitro-1-propanol	H*	
Propene (Propylene)	**F**	
1-Chloro-2-methyl*propene*	H	
3-Chloro-2-methyl*propene*	H	
1,3-Dichloro*propene*	[H]	Used in pesticide applications, but not regulated by 40 CFR 455.
1,2,3-Trichloro*propene*	H*	
Trifluoro*propene*	H*	
Propionaldehyde	G	See ALDEHYDES
Propionic acid (Propanoic acid)	G	See ACIDS
3,3'-Thiodi*propionic* acid and esters	->	See Thiodipropionates
Propionates (esters & salts):		
Benzyl propionate	H*	See Flavors & Fragrances
Calcium, sodium propionate	H*	
Propionitriles:		
3-Amino*propionitrile*	H	
Propoxylates (Propylene oxide adducts)	[H]	Surface active agents. May be regulated by Part 417,
Alcohols (fatty) propoxylates	[H*]	if reported under SIC 2843 (414.11c).
Alcohols (linear alkyl) propoxylates	[H*]	Surface active agent
Alkylphenol propoxylates	[H*]	Surface active agent
Polyoxyalkylene amines	[H]	Surface active agent
n-**Propyl** chloride (1-Chloropropane)	H	See Chloropropanes

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Propylene (Propene)	**F**	
Hexafluoro*propylene*	H*	
Propylene dichloride (1,2-Dichloropropane)	**G**	
Propylene glycol (1,2-Propanediol)	**G**	GLYCOLS
Propylene oxide	**F**	
Hexafluoro*propylene* oxide	H	
Pyridines, "natural"	->	See Coal tar products
Pyridines, “synthetic” (and substituted)	H	
Pyridine	H	
2-Amino-6-methyl*pyridine*	H	
2-Chloro*pyridine*	H	
2-Cyano*pyridine*	H	
Lutidines (Dimethyl*pyridine*s)	H*	
Picolines (Methyl*pyridine*s)	H	
Pyridinethione-N-oxide, Zinc	H	
N-Vinyl*pyridine*	H*	
Pyrimidines	H	
Pyrogallol (1,2,3-Trihydroxybenzene)	H**	
Pyrolysis Gasoline	**F**	
Pyrones (e.g., Coumarin)	H	See Flavors & Fragrances
Pyrroles	H	
Pyrrolidones	H	
2-Pyrrolidinone	H*	
N-Methyl-2-*pyrrolidone* (NMP)	H*	
1-Vinyl-2-pyrrolidinone	H*	
Quinaldine (2-Methyl*quinoline*)	H	
Quinoline (Benzo[b]pyridine)	H*	
8-Hydroxy*quinoline*	H	
8-Hydroxy*quinoline*, Copper	X	Pesticide active ingredient. Tradename: *Copper 8*. Regulated by Part 455 and reported under SIC 2879 (414.11d).
1,2-Dihydro-2,2,4-trimethyl*quinoline*	H	Used in rubber processing.
Quinone (Benzoquinone)	H	
p-Benzo*quinone*dioxime (p-Quinone dioxime)	H	Used in rubber processing.
Quinoxalines:		
2,3-Dichloro*quinoxaline*	H	
Ricinoleates (Ricinoleic acid esters)	H*	
Methyl ricinoleate	H*	
Resorcinol (1,3-Dihydroxybenzene)	H	
Resorcylic acid (2,4-Dihydroxybenzoic acid)	H	
Salicylaldehyde	H	See ALDEHYDES
Salicylanilide	H	See Anilides
Salicylic acid (o-hydroxybenzoic acid)	H	See Aspirin.

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Salicylic acid esters (salicylates)	H*	See Flavors & Fragrances
Sebacates (sebacic acid esters)	H*	See Fatty acid esters
Di(2-Ethylhexyl) sebacate	H	Used as a plasticizer in plastic products.
Di(n-butyl) sebacate	H*	
Sebacic acid	->	See Fatty Acids, "natural"
Semicarbazide: HCl	H	
Silanes:		
Dichlorodimethyl*silane*	H**	
Disalazanes (Imino*silane*s):	H	
Hexamethyl*disalazane* (HMDS)	H*	
Ethyl silicate (Tetraethoxy*silane*)	H**	
Trichlorophenyl*silane*	H**	
Trimethylsilyl iodide (Iodotrimethyl*silane*)	H**	
Silicone fluids	H**	
Silicone resins	->	See PLASTICS
Silicone rubber	->	See PLASTICS
Sodium thiosulfate	[H]	Inorganic chemical. Regulated by Part 415, if reported under SIC 2819 (414.11d).
Solvents:		
Hydrocarbon solvent	[H]	Petrochemical refinery products. Regulated by
Naphtha solvent	[**G**]	Part 419, if reported under SIC 2911 (414.11c).
Sorbic acid and salts	H	
Sorbitol	**G**	
Sorbitol esters, ethoxylated	[H*]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Soybean oil acid esters, epoxidized	H*	Used as a plasticizer in plastic products.
Soybean oil, brominated	H	
Spirogermanium	X	Medicinal chemical. May be regulated by Part 439, if reported under SIC 2833 (414.11d).
Starch derivatives	[H]	Adhesive applications. Part 414 is not applicable, if reported under SIC 2891 (414.11c).
Stearamide	H*	See AMIDES
Stearates (stearic acid esters)	[H*]	See Fatty acid esters
n-Butyl 9,10-epoxy-octadecanoate	H	
n-Butyl stearate	H	Used as a plasticizer in plastic products.
Glyceryl mono*stearate*	[H]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Isobutyl stearate	H*	Used as a plasticizer in plastic products.
Isocetyl stearate	H*	
Isopropyl stearate	H	Used as a plasticizer in plastic products.
Methyl-12-hydroxy stearate	H	
Methyl stearate	H	
Starch stearate	H	
Tridecyl stearate	H*	
Polyethylene glycol stearate	[H]	Surface active agents. May be regulated by Part 417,
Propylene glycol mono*stearate*	[H*]	if previously reported under SIC 2843 (414.11c).

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Stearates (continued):		
Stearate, metal salts (except Calcium salt)	H	
Calcium stearate	**G**	
Stearic acid	H	
Stearyl alcohol	H*	See ALCOHOLS, Octadecanol
Stilbene	H	
bis(4-Amino-2-sulfonic acid) *stilbene* triazine chloride	[H]	Textile brightener
bis(4-Amino-2-sulfonic acid) stilbene	H*	Used as an intermediate in dye synthesis.
bis(4-Nitro-2-sulfonic acid) stilbene	H*	Used as an intermediate in dye synthesis.
Styrene	**F**	
Chloro*styrene*	H	
Styrene oxide (Epoxyethylbenzene)	H	
Succinic acid	H	
Sulfo*succinic* acid esters	[H*]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Succinic anhydride	H	
Alkenyl*succinic* anhydride	H	
Dodecenyl*succinic* anhydride (DDSA)	H	
n-Tetradecenyl*succinic* anhydride	H*	
Succinimides	H	
Succinonitrile	H	
Sulfanilic acid (p-Aminobenzenesulfonic acid)	H	
2,5-Dichloro*sulfanilic* acid	H*	
Sulfates:	->	See Alcohol sulfates
Diethyl sulfate	H	
Dimethyl sulfate	H	
Sulfides:		
Diethyl sulfide	H*	
Methyl sulfide (Dimethyl sulfide)	H	
Sulfoethoxylates of long-chain esters	[H]	Surface active agents. May be regulated by Part 417, if previously reported under SIC 2843 (414.11c).
Sulfosuccinate diesters, ethoxylates	[H*]	
n-Propyl oleate sulfoethoxylate	[H*]	Surface active agent
Sulfolane	H	
Sulfolene	H	
Sulfonamides:		
Toluene*sulfonamide*	H	
3-n-Butylamino-4-methoxy-benzene*sulfonamide*	H	
Sulfones:		
bis(4-Chlorophenyl) sulfone	H	
Sulfonic acid salts (sulfonates):		
Benzene*sulfonic* acid, salts	H	See Benzene
Naphthalene*sulfonic* acid, salts	->	See Naphthalenesulfonic acid and Tetralin
Toluene*sulfonic* acids, salts	->	See Toluene

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Sulfoxides:		
Dimethyl sulfoxide	H	
Tall oil	X	Byproduct of wood pulping process, but not regulated by Part 430. Used as a raw material by facilities subject to Part 414.
Tall oil, except skimming	X	Regulated by Part 454, if reported under SIC 2861 (414.11d)
Tallowates (Tallow fatty acid esters)	[H*]	See Fatty acid esters
Methyl tallowate	H*	
Tannic acid (tannin)	H	
Tars & Pitches	->	See Coal tar products
Terephthalic acid (TPA)	**F**	
2,5-Dianilino terephthalic acid	H	Used as an intermediate in dye synthesis.
Terephthalic acid, dimethyl ester (DMT)	**F**	See Dimethyl terephthalate
Terephthaloyl chloride	H	
Terpene oil (Terpineol, Pinene)	H	See Flavors & Fragrances
Tetraalkylammonium (quaternary) salts:		
Tetrabutylammonium salts	H**	
Tetraethylammonium salts	H**	
Tetraethylammonium chloride (medical grade)	->	Medicinal chemical. Regulated by Part 439 and reported under SIC 2833 (414.11d).
Tetramethylammonium salts	H**	
Tetrapropylammonium salts	H**	
Trimethylbenzylammonium chloride	[H**]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
1,1,2,2-**Tetra**bromoethane	H	
Tetrachloroethylene (Perchloroethylene)	**G**	See Chloroethylenes
Tetraethyl Lead (TEL)	**G**	See Metal Alkyls
Tetrafluoroethylene	H	
Tetrahydrofuran (THF)	H	
Tetralin (1,2,3,4-Tetrahydronaphthalene)	H	
Tetramethyl Lead (TML)	**G**	See Metal Alkyls
1-**Tetralol**, 1-Tetralone (mixture)	**G**	
Tetralone	H*	
6-Methoxy*tetralone*-1	H*	
Thiazoles:		
2-Amino-5-nitro*thiazole*	H	
2-Amino*thiazole* nitrate	H	
3-Trichloromethyl-5-chloro-1,2,4-thiadiazole	H	
4,4'-**Thiobis** (6-tert-butyl-m-cresol)	H*	Used in rubber processing.
Thiodipropionamides, -propionitriles:		
N,N'-Dilauryl thiodipropionamide	H**	
3,3'-Thiodipropionitrile	H**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Thiodipropionates (Thiopropionic acid esters):		
Dilauryl thiodipropionate	H**	
Dimethyl di*thiodipropionate*	H**	
Dimethyl thiodipropionate	H**	
Dimyristyl thiodipropionate	H	
Distearyl thiodipropionate	H**	
Ditridecyl thiodipropionate	H**	
3,3'-Thiodipropionic acid	H**	
Thionocarbamates	H	
Thiophene (Thiofuran)	H**	
Tetrahydro*thiophene*	H**	
Thiopheneacetic acid	H**	
Thiophenols:		
2-Amino*thiophenol*	H	
Thioureas:		
1,3-Di-n-butyl*thiourea*	H*	Used in rubber processing.
1,3-Diethyl*thiourea*	H*	Used in rubber processing.
N,N'-Diphenyl*thiourea*	H	
Ethyl*thiourea*	H	
Thiram (bis[dimethylthiocarbamyl]disulfide)	H	
Toluene	**F**	
p-Bromo*toluene*	H*	
Diamino*toluene*	**G**	See Tolylenediamines
Dinitro*toluene*	**G**	See Dinitrotoluenes
Pentabromo*toluene*	H*	
m-Phenoxy*toluene*	H	
a-Toluenesulfonic acid (Benzylsulfonic acid)	H	
o, *p*-Toluenesulfonic acid	H*	
p-Toluenesulfonic acid salts	[H*]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
a-(N-Ethylanilino)-*p*-*toluene*sulfonic acid	H*	
p-Toluene sulfonyl chloride	H	
Vinyl*toluene*	H*	
Toluates (Toluic acid esters):		
Methyl-p-toluate	H*	
Toluic acid (Methylbenzoic acid)	H	
Toluidines:		
m-Toluidine	H	
o-, *p*-Toluidine	H*	
N,N-Dimethyl-p-*toluidine*	H*	
N-Ethyl-m-*toluidine*	H*	
Toluidines (m-, o-, p-isomer mix)	H	
Tolylenediamines (TDA) (Diaminotoluene)	**G**	See AMINES
2,4-Tolylenediamine	**G**	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Tolylenediamines (continued):		
2,6-Tolylenedi(diazonium chloride)	H	Used as an intermediate in dye synthesis.
Tolylene diisocyanates (TDI)	**G**	See Isocyanates
2,4-Toluene diisocyanate	**G**	
2,6-Toluene diisocyanate	**G**	
Toxaphene (Polychlorocamphene)	X	Pesticide active ingredient. Regulated by Part 455 and reported under SIC 2879 (414.11d).
Triacetin	->	See Acetates
s-**Triazine**s	->	See Cyanuric acid, Isocyanuric acid
Triazoles:		
1,2,4-Triazole	H*	
Tolyl*triazole*	H	
1,1,1-**Trichloro**ethane (Methyl chloroform)	**G**	See Chloroethanes
Trichloroethylene (Trichloroethene)	**G**	See Chloroethylenes
Tri-p-cresyl phosphate	H	See Phosphate esters
Tricyclodecenyl esters	H	See Flavors & Fragrances
Tridecyl alcohol sulfate, sodium	[H]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Triethanolamine	H	See Ethanolamines
Triethylene glycol	H	See GLYCOLS
Triglycol dichloride (Triethylene glycol dichloride)	H	
Trimellitates (Trimellitic acid esters):		
Tri(2-ethylhexyl) trimellitate	H*	Used as a plasticizer in plastic products.
Triisononyl trimellitate	H*	Used as a plasticizer in plastic products.
Triiso-octyl trimellitate	H*	Used as a plasticizer in plastic products.
Trimellitic acid (1,2,4-Benzene tricarboxylic acid)	**G**	
Trimellitic acid 1,2-anhydride	H*	
Trimesic acid (1,3,5-Benzene tricarboxylic acid)	H	
Trimethylpentane –		
2,2,4-*Trimethyl*-1,3-*pentane*diol	**G**	See Diols
2,2,4-*Trimethylpentane*diol-1,3-diisobutyrate	H*	Used as a plasticizer in plastic products.
2,4,4-*Trimethyl*-2-*pentane*thiol	H*	See MERCAPTANS
Trimethylolpropane	H*	See Oxo Alcohols
Trimethylolpropane triacrylate	H*	
Trimethylolpropane trimethacrylate	H*	
Trimethylolpropane trioleate	H*	
Trimethylol propane tri (3-mercaptopropionate)	H*	
Trimethyl phosphite	H**	See Phosphites
Triphenylmethane	H	
Polychlorinated triphenyls	H	
Ureas:		
N,N'-Diphenyl*urea* (Diphenylcarbamide)	H*	

Organic chemical product[a]	Subpart[b]	Remarks and Cross-References
Ureas (continued)		
Dimethylol dihydroxyethylene urea	H**	
Urethane prepolymers	[G]	Regulated in Part 414 as both an organic chemical and a plastic product. See PLASTICS, Polyurethane.
Vegetable oils, Sulfated	[H]	Surface active agent. May be regulated by Part 417, if reported under SIC 2843 (414.11c).
Vinyl acetate	**F**	See Acetates
Vinyl bromide	H	
Vinyl chloride	**F**	
Vinyl fluoride	H*	
Vinylidene chloride	**G**	See Chloroethylenes
Vinyltoluene	H*	See Toluene
Waxes, as emulsions and dispersions	X	Part 414 not applicable. Product was deleted. [55 FR 42336 (Oct. 18, 1990)]. May be reported under SIC 2842.
Polyethylene Wax (latex emulsion)	->	See PLASTICS, Polyethylene
Xanthates	H	
Ethylthio*xanthate*, Sodium	H*	
Isopropyl*xanthate*, Zinc	H*	
Xylenes, mixed	**F**	
o-Xylene	**F**	
m-Xylene, crude (contains p-xylene)	**F**	
p-Xylene	**F**	
Xylene sulfonic acid, sodium	H	
Xylenols, mixed	H	
2,4-Xylenol	H	
2,5-Xylenol	H	
3,4-Xylenol	H	
3,5-Xylenol	H	
Xylidines, mixed	H	
2,6-Xylidine (2,6-dimethylaniline)	H	See Aniline

Abbreviations and Explanatory Notes

Column Header Notations

(**a**) Listing in **organic chemical products** column adapted from:
1. Tables V, VI and VII in Volume II, Appendix III-A, Final Development Document for Effluent Limitations Guidelines and Standards for the Organic Chemicals, Plastics and Synthetic Fibers. EPA 440/1-87/009, October, 1987.
2. OCPSF Product/Process File compiled by the Industrial Technology Division of EPA's Office of Water Regulations and Standards, 1976-1983.
3. 1986 *SRI Directory of Chemical Producers*.

(**b**) **Subpart** column notations:
F = Subpart F - Commodity Organic Chemicals.
G = Subpart G - Bulk Organic Chemicals.
H = Subpart H - Specialty Organic Chemicals.

[ ] = Indicates a change in the status of a product since promulgation of the OCPSF regulation, or the product's classification is conditioned by the definitions of applicability given at 40 CFR 414.11 Changes in product classification were prompted by amendments to the OCPSF Regulation [e.g., 55 FR 42332 (Oct. 18, 1990)] and by corrections for errors in the listings of products in Table V, VI, or VII of the OCPSF Development Document.

X = The OCPSF regulation is not applicable to the product. Reason noted in "Remarks" column.

* = The product was *not listed* in Table V, VI, or VII in the OCPSF Development Document, Vol. II, Appendix III-A. These additional products were selected from those shown in the 1986 SRI Directory of Chemical Producers as being *manufactured by two or more plants*. A single asterisk indicates the appropriate Subpart for an organic chemical that was not specifically listed in the OCPSF Dev. Doc., but *can* be classified within a product group that was listed.

** = Indicates an appropriate Subpart for a chemical of commerce that was *unlisted* in the OCPSF Dev. Doc. and *cannot* be classified within an OCPSF product group that was listed. Such products are <u>implied</u> as OCPSF by the global title of Table VII E, "Other Organic Chemicals and Chemical Groups."