UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS 02203-2211

July 6, 1994

Randall H. Morse
Vice President
Schleicher & Schuell
10 Opticle Avenue
P.O. Box 2012
Keene, NH 03431-2012

Dear Mr. Morse:

This letter is in response to your letter dated May 6, 1994 regarding the waste handling requirements for ethidium bromide EtBr. In your letter you stated that EtBr is commonly used by scientists in molecular biology research laboratories to stain double-stranded DNA fractionated in agarose electrophoresis gels.

You specifically asked the following questions in your letter:

- Is ethidium bromide EtBr controlled by EPA?
- Is it found on any list of any sub-division of the EPA, such as TSCA, SARA, or RCRA?
- What EPA regulations govern EtBr?
- What concentrations are permissible for drain disposal?
- What distinctions are made for the disposal of EtBr as a solid waste (on a filter), or as a liquid waste (down the drain)?
- What are the appropriate regulations for disposal as a liquid or as a solid?

Please be advised that the information provided here is with reference to Federal Regulations only. Individual states are very likely to have laws that are broader or more stringent than Federal laws.

Under RCRA Subtitle C hazardous waste regulations, each generator of a waste is responsible for making a hazardous waste determination under 40 CFR §262.11. If the waste exhibits one of the four characteristics of hazardous waste identified in Subpart C of Part 261 (i.e. ignitability, corrosivity, reactivity or toxicity) or is a waste listed in Subpart D of Part 261, it must be managed in accordance with Federal hazardous waste

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regulations. EtBr is not listed in Subpart D of Part 261. The determination of EtBr as a characteristic hazardous waste would be accomplished by testing it in accordance with the procedures stated in Subpart C of Part 261.

During telephone conversations with our office you indicated that your company was developing a product that would treat the EtBr waste stream on-site. The treatment of spent or used EtBr, if determined to be a hazardous waste, would not require the issuance of a permit for on-site treatment prior to disposal so long as the treatment occurs within 90 days of generation and the treatment takes place in an accumulation container or tank in conformance with the requirements of 40 C.F.R. § 262.34 and Subparts I and J of 40 C.F.R. Part 265 (Standards for containers and tank systems). You can contact Mel Cheeks for further information pertaining to Federal RCRA regulations.

The General Pretreatment Regulations at 40 CFR Part 403 govern discharges to municipal sewer systems. For those industrial sources that are covered by a specific categorical pretreatment standard, that facility must comply with the specific effluent guidelines established in that category. However, if local ordinances/requirements are established by municipalities that are more stringent than categorical limits, the more stringent of the two standards (i.e., local limits or categorical standards) would need to be complied with. For specific information pertaining to these regulations contact Mark Spinale of the Water Management Division of EPA.

Regarding the discharge of EtBr through a sewer system into the ground, the Safe Drinking Water Act, Part C (42 U.S.C. 300f et seq.) mandates regulation of underground injection of fluids through wells. EPA has promulgated a series of Underground Injection Control (UIC) regulations (40 CFR Parts 144, 145, 146) under this authority to protect underground sources of drinking water (USDW). All the New England states have UIC Programs that have been approved and delegated primacy per 40 CFR Part 145 to implement these regulations. States, as a condition of UIC primacy may adopt regulations more stringent than EPA. Owners or operators of injection wells are prohibited from allowing the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141, or may otherwise adversely affect human health. In New England, UIC Programs regulate primarily Class V wells which are those that discharge into or above a USDW. Floor drainage, liquid wastes, process wastewater, treated and untreated sewage, stormwater, washwater, spill drainage, etc. discharged to Class V UIC wells such as a well, leach field, leaching pit, leaching trench, dry well or a cesspool in commercial and industrial facilities pose a significant hazard to drinking water. Class V UIC wells used to inject RCRA defined hazardous waste banned by UIC regulations and Section 3020(a) of RCRA are reclassified Class IV UIC wells and are prohibited. For

specific information pertaining to these regulations contact David Delaney.

The Superfund Amendments and Reauthorization Act (SARA) has four major regulatory provisions, they are emergency planning, emergency notification, community right to know reporting requirements and toxic chemical reporting (Attachment A). For more specific information regarding the SARA program contact Dwight Peavey and Don Mackie.

The Toxic Substances Control Act (TSCA) has four major regulatory provisions, they are inventory and pre-manufacture notification, chemical testing, reporting and recordkeeping and regulation of hazardous chemical substances (Attachment B). For specific information pertaining to the TSCA program contact Kim Schweisberg.

Contaminated EtBr could possibly be classified as a medical waste if it were used in medical applications. Each state maintains their own medical waste program. EPA currently does not regulate medical waste. Attachment C is a list of state contacts that handle medical waste issues.

You may purchase your own set of Federal Regulations by contacting: Superintendent of Documents, Government Printing Office, Washington, DC 20402, (202) 783-3238. Attachment D provides a list of address and phone numbers for EPA-New England staff who can provide further assistance.

Sincerely,

Matthew R. Hoagland, Chief
ME/NH/VT Waste Regulation Section

cc: [redacted]
Research Library
Mark Spinale - EPA
David Delaney - EPA
Kim E. Schweisbeg - EPA
Joan Jouzaitis - EPA

2H EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW

Purposes

The Superfund Amendments and Reauthorization Act (SARA) of 1986 was enacted into law on October 17, 1986. An important component of the SARA provisions is Title III: Emergency Planning and Community Right-to-Know Act of 1986. Title III establishes requirements for Federal, State and local governments and industry regarding emergency planning and "community right-to-know" reporting on hazardous and toxic chemicals. This legislation builds upon EPA's Chemical Emergency Preparedness Program (CEPP) and numerous State and local programs aimed at helping communities to better meet their responsibilities in regard to potential chemical emergencies. The community right-to-know provisions will help to increase the public's knowledge and access to information on the presence of hazardous chemicals in their communities and releases of these chemicals into the environment. States and communities, working with facilities, will be better able to improve chemical safety and protect public health and the environment.

The emergency planning and community right-to-know provisions have four major sections: emergency planning (Sections 301-303), emergency releases notification (Section 304), community right-to-know reporting requirements (Sections 311, 312), and toxic chemical release reporting emissions inventory (Section 313). Information from these four reporting requirements will help States and communities develop a broad perspective of chemical hazards for the entire community as well as for individual facilities.

Major Regulatory Provisions

Emergency Planning

Sections 301-303 of the law mandate that the Governor of each State organize a State Emergency Response Commission (SERC) which in turn designates Local Emergency Planning Committees (LEPC). The local committees are responsible for evaluating the available resources and developing emergency response plans for their communities.

Emergency Notification

Under Section 304, facilities must immediately notify the Local Emergency Planning Committees and the State Emergency Response Commissions likely to be affected if there is a release into the environment of a listed hazardous substance that exceeds the reportable quantity for that substance. Substances subject to this requirement are those on the list of 366 extremely hazardous substances as published in the Federal Register (40 CFR 355) or on a list of 721 substances subject to the emergency notification requirements under CERCLA Section 103(a) 40 CFR 302.4). Some chemicals are common to both lists.

Enforcement Authorities

Section 325 of the Emergency Planning and Community Right-to-Know Act addresses the penalties for failure to comply with the requirements of this law. Civil and administrative penalties ranging from up to $10,000 - $75,000 per violation can be assessed to facilities that fail to comply with the emergency planning (Section 302), emergency notification (Section 304), community right-to-know (Sections 311 and 312), toxic chemical release (Section 313) and trade secret (Sections 322 and 323) reporting requirements.

Criminal penalties up to $50,000 or five years in prison may also be given to any person who knowingly and willfully fails to provide emergency release notification. Penalties of not more than $20,000 and/or up to one year in prison may be given to any person who knowingly and willfully discloses any information entitled to protection as a trade secret. In addition, Section 326 allows citizens to initiate civil actions against EPA, State Emergency Rsponse Commissions, and/or the owner or operator of a facility for failure to meet the requirements of the emergency planning and community right-to-know provisions. A State Emergency Response Commission, Local Emergency Planning Committee, State or local government may institute actions against facility owner/operators for failure to provide trade secret information.

2E TOXIC SUBSTANCES CONTROL ACT (TSCA)

Purposes

The Toxic Substances Control Act (TSCA), signed into law in October 1976, provides EPA with broad authority to regulate chemicals and chemical substances whose manufacture, processing, distribution in commerce, use or disposal may present an unreasonable risk of injury to health or the environment. The Act was enacted to keep harmful chemicals out of the environment and to fill the gaps in existing environmental laws in the areas of toxic substances.

The Act deals with all toxic chemicals planned for production, produced, imported, or exported from the country. TSCA applies primarily to manufacturers, distributors, processors, and importers of chemicals. The only exceptions to this authority are:

- Pesticides (as defined in FIFRA as a pesticide);
- Tobacco or tobacco products;
- Source material by-products or special nuclear material as defined by the Atomic Energy Act; and
- Food, food additives, drugs, and cosmetics under the Federal Food, Drug and Cosmetic Act.

Major Regulatory Provisions

- Inventory and Pre-Manufacture Notification. If EPA determines that a new chemical substance poses a risk to health or the environment, it can prohibit or regulate its manufacture.

  EPA has published an inventory of existing chemicals. Substances not on that list are considered "new," and require Pre-manufacture Notifications (PMN) to be submitted to EPA. Before manufacturing or importing new chemicals, or processing existing chemicals for significant new uses, notice must be submitted at least 90 days before manufacture, processing, shipping or sales (TSCA, Section 5). If EPA does not make a declaration within 90 days to restrict the product, then full marketing can begin, and the chemical is added to the inventory. Conversely, EPA may review the product data for an additional 90 days; negotiate for suitable data; prohibit manufacture or distribution until risk data are available; reject the PMN for insufficient data; or, pending development of a Section 6 rule, completely ban the product from the market.

- Testing. Under TSCA, Section 4, EPA can require product testing of any substance which "may present an unreasonable risk of injury to health or to the environment." Some testing standards are proposed, but no testing requirements for specific chemicals are yet in effect.

- Imminent Hazard. Imminent hazard is defined as a chemical substance or mixture causing an imminent and unreasonable risk of serious or widespread injury to health or the environment. When such a condition prevails, EPA is authorized by TSCA, Section 7 to bring action in U.S. District Court. Remedies include:

  - Seizure of the chemical or any article containing such chemical;
  - Notice of risk to the affected population; or
  - Recall, replacement or repurchase of the substance.

Enforcement Authority

- EPA Inspection Authority. Under Section 11, EPA "and duly designated representatives of the Administrator" may inspect any establishment, facility, or other premises in which chemical substances are manufactured, processed, stored, or used before or after their distribution in commerce, and any conveyance being used to transport chemical substances, mixtures, or such articles in connection with distribution in commerce.

  An inspection shall extend to all things within the premises or conveyance inspected (including records, files, papers, processes, controls and facilities) bearing on whether the requirements of TSCA applicable to the chemical substances or mixtures within such premises or conveyance have been complied with. The only exceptions are that no inspection shall extend to financial data, or research data (other than data required under TSCA or regulations), unless the nature and extent of such data are described with reasonable specificity in the notice of inspection.

  Inspections are to be commenced and completed with "reasonable promptness," and conducted at "reasonable times," within "reasonable limits," and in a "reasonable manner." Inspection may only be made upon:

  - Presentation of proper credentials;
  - Presentation of a written notice of inspection to the owner, operator or agent in charge of the premises or conveyance; and
  - Separate notice for "each such inspection," but a notice shall not be required for each entry made during the period covered by the inspection.

- Subpoena Authority. EPA may require the attendance and testimony of witnesses under oath, and/or the production of documents. Subpoenas do not have to be issued by a Court, and can be used to investigate any activity TSCA prohibits.

- Authority to Regulate Imports. EPA has authority to ensure that imported chemicals at a facility have the proper import documents. U.S. customs inspectors may refuse entry into the United States of foreign chemicals that fail to meet TSCA requirements.

ATTACHMENT C

2/94

MEDICAL WASTE CONTACTS

Washington, DC and Region I

U. S. Environmental Protection Agency

Special Programs Section (OS-332)
Office of Solid Waste
U. S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Michaelle Wilson, Chief, Special Programs: (202) 260-4669
Kristina L. Meson: (202) 260-5736
Ann Codrington: (202) 260-4777

Waste Management Division (HRW-CAN3)
U. S. Environmental Protection Agency
Region I
J. F. Kennedy Federal Buiding
Boston, MA 02203-2211

Robin Biscaia: (617) 573-5754
Austine Frawley: (617) 573-5758

Other Federal Agencies

Research & Special Programs Administration (RSPA)
U. S. Department of Transportation
Mail Stop DHM22
400 7th Street, SW
Washington, DC 20590-0001

George E. Cushmac, PhD: (202) 366-4545
Eileen Martin: (202) 366-4488

Occupational Safety & Health Administration (OSHA)
U. S. Department of Labor
Room N-3718
200 Constitution Avenue, NW
Washington, DC 20210

Kevin Landkrohn: (202) 523-7157

Occupational Safety & Health Administration (OSHA)
U. S. Department of Labor
133 Portland Street
Boston, MA 02114

Ron Ratney: (617) 565-7164, x 130

ATTACHMENT C

State Agencies

Connecticut

Waste Management Bureau
Connecticut Department of Environmental Protection
165 Capitol Avenue
Hartford, CT 06106

Maria Valez: (203) 566-5847
Tom Pregman: (203) 566-5847

Massachusetts

Division of Community Sanitation
Massachusetts Department of Public Health
305 South Street
Jamaica Plain, MA 02130

Howard Wensley, MS, CHO: (617) 727-2660

Division of Solid Waste
Massachusetts Department of Environmental Protection
One Winter Street
Boston, MA 02108

James Decette: (617) 292-5868

Maine

Bureau of Hazardous Material & Solid Waste Control
Maine Department of Environmental Protection
State House Station #17
Augusta, ME 04333-0017

Scott Austin: (207) 287-2651

New Hampshire

Waste Management Division
New Hampshire Department of Environmental Services
6 Hazen Drive
Concord, NH 03301

Carl Woodbury: (603) 271-2925

ATTACHMENT C

Rhode Island

Office of the Director
Rhode Island Department of Environmental Management
9 Hayes Street
Providence, RI 02908

Roger Greene: (401) 277-2771

Environmental Health/Risk Assessment
Rhode Island Department of Health
3 Capitol Hill
Providence, RI 02908

Diann Miele: (401) 277-3424

Vermont

Hazardous Materials Division
Vermont Agency of Natural Resources
103 South Main Street
Waterbury, VT 05676

Gary Urich: (802) 241-3888

ATTACHMENT D

Mel Cheeks
Waste Regulation Section
(617) 223-5590

Kim E. Schweisberg
Toxic Substances Control Section
(617) 565-3165

Mark Spinale
Municipal Evaluation Section
(617) 565-3554

David Delaney
Ground Water Management Section
(617) 565-3615

Don Mackie
Emergency Response Section
(617) 860-4396

Dwight Peavy
Toxics and Radiation Section
(617) 565-3230

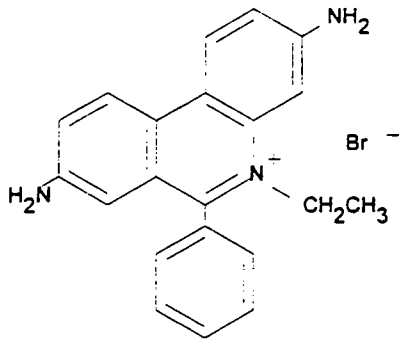
NR

PRODUCT #: E8751 NAME: ETHIDIUM BROMIDE
MATERIAL SAFETY DATA SHEET, Valid 11/93 - 1/94
Printed Tuesday, May 24, 1994 10:14AM

Sigma Chemical Co.
P.O. Box 14508
St. Louis, MO 63178
Phone: 314-771-5765

Aldrich Chemical Co.
1001 West St. Paul
Milwaukee, WI 53233
Phone: 414-273-3850

Fluka Chemical Corp.
980 South Second St.
Ronkonkoma, NY 11779
Phone: 516-467-3535



E8751

SECTION 1. - - - - - - - - - - CHEMICAL IDENTIFICATION- - - - - - - - - - -
PRODUCT #: E8751 NAME: ETHIDIUM BROMIDE

SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - - -
CAS #:1239-45-8
MF: C21H20BR1N3

SYNONYMS
2,7-DIAMINO-10-ETHYL-9-PHENYLPHENANTHRIDINIUM BROMIDE * 3,8-DIAMINO-5-ETHYL-6-PHENYLPHENANTHRIDINIUM BROMIDE * 2,7-DIAMINO-9-PHENYL-10-ETHYLPHENANTHRIDINIUM BROMIDE * 2,7-DIAMINO-9-PHENYLPHENANTHRIDINE ETHOBROMIDE * DROMILAC * ETHIDIUM BROMIDE * HOMIDIUM BROMIDE * RD 1572 *

SECTION 3. - - - - - - - - - - - HAZARDS IDENTIFICATION - - - - - - - - - -

LABEL PRECAUTIONARY STATEMENTS
TOXIC
MAY CAUSE HERITABLE GENETIC DAMAGE.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE (SHOW THE LABEL WHERE POSSIBLE).
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
DO NOT BREATHE DUST.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE

59

PROTECTION.

SECTION 4. - - - - - - - - - - - FIRST-AID MEASURES- - - - - - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES.

IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER.

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. - - - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - - - - -

EXTINGUISHING MEDIA

WATER SPRAY.

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. - - - - - - - - - ACCIDENTAL RELEASE MEASURES- - - - - - - - -

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.

SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.

AVOID RAISING DUST.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. - - - - - - - - - - - HANDLING AND STORAGE- - - - - - - - - - -

REFER TO SECTION 8.

SECTION 8. - - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - - -

CHEMICAL SAFETY GOGGLES.

RUBBER GLOVES.

NIOSH/MSHA-APPROVED RESPIRATOR.

SAFETY SHOWER AND EYE BATH.

USE ONLY IN A CHEMICAL FUME HOOD.

DO NOT BREATHE DUST.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

WASH THOROUGHLY AFTER HANDLING.

IRRITANT.

MUTAGEN.

KEEP TIGHTLY CLOSED.

STORE IN A COOL DRY PLACE.

SECTION 9. - - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - - -

APPEARANCE AND ODOR

DARK PURPLE TO MAROON POWDER

MELTING POINT: 260 C TO 262 C (DEC)

SECTION 10. - - - - - - - - STABILITY AND REACTIVITY- - - - - - - - - -

INCOMPATIBILITIES

STRONG OXIDIZING AGENTS

5c

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
TOXIC FUMES OF:
CARBON MONOXIDE, CARBON DIOXIDE
NITROGEN OXIDES
HYDROGEN BROMIDE GAS

SECTION 11. - - - - - - - - - - TOXICOLOGICAL INFORMATION - - - - - - - -

ACUTE EFFECTS
MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.
CAUSES EYE AND SKIN IRRITATION.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

CHRONIC EFFECTS
MAY ALTER GENETIC MATERIAL.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

RTECS NO: SF7950000
PHENANTHRIDINIUM, 3,8-DIAMINO-5-ETHYL-6-PHENYL-, BROMIDE

TOXICITY DATA
SCU-MUS LD50:110 MG/KG ATMPA2 46,285,52

TARGET ORGAN DATA
TUMORIGENIC (ACTIVE AS ANTI-CANCER AGENT)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

SECTION 12. - - - - - - - - - - ECOLOGICAL INFORMATION - - - - - - - - - - -
DATA NOT YET AVAILABLE.

SECTION 13. - - - - - - - - - - DISPOSAL CONSIDERATIONS - - - - - - - - - -
DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - - - - - - - TRANSPORT INFORMATION - - - - - - - - - -
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - - - - - - REGULATORY INFORMATION - - - - - - - - - - -

REVIEWS, STANDARDS, AND REGULATIONS
NOHS 1974: HZD A1168; NIS 1; TNF 17; NOS 1; TNE 34
NOES 1983: HZD A1168; NIS 1; TNF 7; NOS 3; TNE 21
EPA GENETOX PROGRAM 1988, POSITIVE: IN VITRO MAMMALIAN NONHUMAN MICRONUCLEUS
EPA GENETOX PROGRAM 1988, POSITIVE: E COLI POLA WITHOUT S9; HISTIDINE REVERSION-AMES TEST
EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.-SA7/SHE; SPERM MORPHOLOGY-MOUSE
EPA GENETOX PROGRAM 1988, NEGATIVE: S CEREVISIAE GENE CONVERSION; S CEREVISIAE-HOMOZYGOSIS
EPA GENETOX PROGRAM 1988, NEGATIVE: S CEREVISIAE-REVERSION
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: CYTOGENETICS-MALE GERM CELL
EPA GENETOX PROGRAM 1988, POSITIVE: CHO GENE MUTATION

SECTION 16. - - - - - - - - - - OTHER INFORMATION- - - - - - - - - - - -

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA, ALDRICH, FLUKA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.
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Schleicher & Schuell

May 6, 1994

Mel Cheeks
USEPA, Region I
Mail Code HPRCANI
J. F. Kennedy Building
Boston, MA 02203-2211

RE: EPA REGULATIONS FOR ETHIDIUM BROMIDE (Homidium Bromide)

Dear Mr. Cheeks:

A few days ago, we spoke on the telephone about EPA legislation/regulation concerning the disposal of ethidium bromide (EtBr).

EtBr (CAS# 1239-45-8; Merck Index # 4650) is commonly used by scientists in molecular biology research laboratories to stain double-stranded DNA fractionated in agarose electrophoresis gels. When intercalated into DNA, EtBr will fluoresce at 312 nm. It is most commonly used in a 0.5% solution in water or salt solutions. EtBr is a known mutagen as determined by the Ames test. Although some scientists will reuse EtBr-containing buffered solutions, primarily the solution is "decontaminated". The EtBr is disposed of as solid waste, and the buffered solution is disposed of as liquid waste. My interpretation is that EtBr is a mutagenic, toxic solid or liquid, hazardous, discarded chemical waste (40 CRF 261).

Our Company believes there is need to offer an effective and convenient way for scientists to decontaminate EtBr-containing solutions. This would be accomplished by filtering EtBr-containing buffer through an activated carbon filter, thereby concentrating the EtBr on the filter and disposing of the decontaminated solution down the drain.

What we need to know from the USEPA is the following:

1. Is ethidium bromide controlled by the EPA?
2. Is it found on any lists of any sub-division of the EPA; such as: TSCA, SARA, or RCRA? Please supply me with this reference material.
3. What EPA regulations (by Number/Paragraph) govern EtBr?
4. What concentrations are permissible for drain disposal?
5. What distinctions are made for the disposal of EtBr as a solid waste (on a filter), or as a liquid waste (down the drain)?
6. What are the appropriate regulations for disposal as a liquid or as a solid?

Our Company objective is to responsibly communicate the appropriate governmental standards to our customers regarding the proper disposal of EtBr from their laboratories. Please send me any relevant information that will help us communicate this information.

I will be happy to discuss this matter with you in more detail. Please feel free to call me at 603-352-3810 x3290. We are anxious to proceed on this product development project, so we respectfully request that this matter be addressed directly, and that we receive a response within three weeks.

Thank you very much in advance.

Sincerely,
SCHLEICHER & SCHUELL, INC.

Randall H. Morse

Randall H. Morse
Vice President
New Business Development

h:ebh

Schleicher & Schuell, Inc. • 10 Optical Ave. • P.O. Box 2012 • Keene, NH 03431-2012 • Phone: 603-352-3810 • FAX: 603-357-3627