



PECO ENERGY

PECO Energy Company
2301 Market Street
PO Box 8699
Philadelphia, PA 19101-8699
215 841 4000

June 14, 1994

Mr. Sohan Garg
Department of Environmental Resources
Suite 6010, Lee Park
555 North Lane
Conshohocken, PA 19428

Dear Mr. Garg:

Subject: Limerick Generating Station NPDES Permit No. PA0051926

Pursuant to Chapter 92.7, "Reporting of New or Increased Discharges," we are requesting the subject permit be amended to allow the use of Sodium Bromide 40, supplied by Albemarle Corporation, as an alternative to the currently permitted Bromide Plus, supplied by JNB Laboratories. The station uses the sodium bromide (in a water solution) in the cooling towers during chlorination to improve the effectiveness of the chlorine. The products are chemically equivalent, therefore, the Sodium Bromide 40 would be used at the same currently approved frequency, duration and usage rate (1,888 pounds per day) as the Bromide Plus.

Usage of the Sodium Bromide 40 represents a substantial cost savings to the station. Therefore, we are requesting that a favorable response be received by June 28, 1994. Your prompt attention in this matter would be greatly appreciated. Attached are the aquatic toxicity data and MSDS information for the Sodium Bromide 40.

A copy of this letter (including any attachments or enclosures) is being sent to the U.S. Nuclear Regulatory Commission (USNRC) in accordance with the Limerick Generating Station, Units 1 and 2, Environmental Protection Plan, Section 3.2, which stipulates that USNRC shall receive a copy of any proposed changes to the NPDES permit at the same time that the permitting agency is notified.

If you have any questions or require additional information, please contact me at (215) 841-5177.

Sincerely,

Robert M. Matty, Jr.
Engineer
Environmental Affairs

Attachment

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cc: U.S. Nuclear Regulatory Commission, Document Control Desk
(Docket Nos. 50-352 and 50-353 & License Nos. NPF-39 and NPF-85)
T. T. Martin, Administrator, USNRC, Region 1
N. S. Perry, USNRC Senior Resident Inspector, LGS

FYI - Current Product

JNB Laboratories

P.O. Box 191
Pennington, N.J. 08534
(609) 924-6274

December 28, 1990

Mr. Steven Diech
Limerick Generating Station
Philadelphia Electric Company
P.O. Box A, Sanatoga Branch
Pottstown, Pa. 19464

Re: Toxicity Data - Sodium Bromide

Dear Steve,

The following is the toxicity data as requested. Please note that the studies are performed using technical grade sodium bromide in drinking water. The reason for this is that BROMIDE PLUS is made in this way. BROMIDE PLUS is a 40% solution of technical grade sodium bromide solid in a drinking water solution. Since this is different from the other suppliers since they start with a solution and then concentrate it. Therefore, low level organic impurities are present this type of product.

The following is the toxicity data for BROMIDE PLUS:

Bluegill Sunfish

96-hour LC50 1000 mg/l, highest conc. tested
96-hour NOEL = 1000 mg/l


Rainbow Trout

96-hour LC50 1000 mg/l, highest conc. tested
96-hour NOEL = 320 mg/l

Daphnia Magna

48-hour LC50 1000 mg/l, highest conc. tested
48-hour NOEL = 1000 mg/l

We hope that the above data is sufficient.

Sincerely,

Nelson Brown

FAX SHEET

HEALTH AND ENVIRONMENT
ETHYL CORPORATION
451 Florida Boulevard
Baton Rouge, Louisiana 70801

FAX No. (504) 388-7046

TO: Steve Dietch

FAX NO.: 610/326-0249

FROM: Jeanine Addison Guidroz

DATE: 06/02/94

PAGES: 1

SUBJECT: Sodium Bromide 40

As we discussed on the telephone, the LC50 and EC50 values for fathead minnows and Daphnia magna were 31.6 ml/l and 14.1 ml/l. Based on the specific gravity for Sodium Bromide 40 of 1.41 g/ml, these results are equivalent to values of 44,556 ppm and 19,881 ppm respectively.

Regarding the Daphnia magna results for Sodium Bromide, the LC50 is > 1000 mg/l.

If you have any questions, please contact me at 504/388-7760.



SODIUM BROMIDE WATER TREATMENT

Bromine Chemicals

PRODUCT DATA SHEET

Description

Sodium Bromide Water Treatment Solutions are available in concentrations of 40% and 45% by weight. Sodium Bromide water treatment solutions are FIFRA registered for use as a disinfectant, bactericide, fungicide, algicide, slimeicide, and molluscicide.

Applications

Sodium Bromide solutions are used in conjunction with an oxidizer, chlorine (99.9%) or sodium hypochlorite (12.5%), as biocides in cooling water (recirculating and industrial once-through), brewery, pasteurizing systems, wastewater systems, and pulp and paper mills.

Specifications

	Sodium Bromide 40	Sodium Bromide 45
NaBr, wt %	35.0 - 42.0	44.0 - 46.0
pH (1:10 dilution)	7.0 - 9.0	7.0 - 9.0
Specific gravity, 70°F/70°F	1.385 - 1.440	1.470 - 1.495
Color, APHA max	30	30
Hardness as CaCO ₃ , ppm max	55	55

Physical Properties

	Sodium Bromide 40	Sodium Bromide 45
Appearance	Clear liquid, light to water white	Clear liquid, light to water white
Density, lb/gal, 70°F (21°C)	11.6 - 12.1	12.3 - 12.8
g/ml	1.39 - 1.45	1.48 - 1.50
Boiling point, °F (°C)	212 - 234 (100 - 112)	212 - 234 (100 - 112)
Color	Slight	Slight
Flash point	None	None

Shipping Information

Container Information

Sodium Bromide is shipped in tank trailers, tank cars and drums.

Shipping Classification

Not regulated for transportation.

Safety and Handling Information

These chemicals should be handled as concentrated brine solutions.

Chemical splash goggles should be used when handling this material. Gloves resistant to chemical penetration are recommended. If repeated or prolonged skin contact or clothing contamination is likely, additional protective clothing should be worn. Under normal conditions, respiratory protection is not required. Use good general ventilation when handling this material.

In case of physical contact, immediately flush skin and eyes with copious amounts of water for at least 15 minutes.

For specific safety, toxicity and handling information, please refer to the Material Safety Data Sheet on this product.

Regulatory Information

Use of product is regulated by the US EPA and enforced by the state agencies. Therefore, state registration is required prior to sales and distribution.

Chemical Registration Numbers

CAS: 7647-15-6
EINECS: 231-599-9
MIT: 1-113

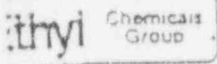
The information presented herein is believed to be accurate and reliable, but is presented without guarantee or responsibility on the part of Albemarle Corporation. Further, nothing contained herein shall be taken as an inducement or recommendation to manufacture or use any of the herein described materials or processes in violation of existing or future patents.



AMERICAS 151 Fonda Street • Baton Rouge, Louisiana 70801 • Phone: 504-360-7040 • Toll-Free: 1-800-525-8030 • Fax: 504-246-7656
EUROPE Avenue Louise, 523 (Boulevard 19) • B-1050 Brussels, Belgium • Phone: 32-2-642-44-11 • Fax: 32-2-648-05-60
ASIA-PACIFIC #13-08 PUB Bldg. • Devonshire Wing • 111 Somerset Road • Singapore 0623 • Republic of Singapore • Phone: 65-732-6286 • Fax: 65-737-4123

MATERIAL SAFETY DATA SHEET

FOR EMERGENCIES ONLY - Phone 504-344-7147
For Nonemergency Health and Safety Information Phone 504-388-7717



CLASSIFICATIONS:
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0

ISSUE DATE: 09/18/92
SUPERSEDES: 08/31/92

98.0.8

PRODUCT IDENTIFICATION

PRODUCT NAME: Sodium Bromide 40 Water Treatment
CHEMICAL NAME: Sodium Bromide, Water Solution
CAS NO.: Not applicable-mixture
CHEMICAL FORMULA: NaBr/H2O
CHEMICAL FAMILY: Metal Bromide

SUMMARY OF HAZARDS

Eye irritant.

HAZARDOUS COMPONENTS

CHEMICAL NAME	CAS NO.	NOTE	EXPOSURE LIMIT
Sodium Bromide	7647-15-6	ND	Not established by OSHA/ACGIH.

NOTE: Carcinogenicity listing of components at concentrations greater than or equal to 0.1% indicated by: Q=NTP; #=IARC; =OSHA; +=ACGIH; *=OTHER; ND=Not Designated.

CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE/ODOR: Clear liquid/little or no odor.
BOILING POINT: 110-112C/212-234F.

Ethyl Corporation - Chemicals Group

Ethyl Tower 451 Florida Blvd., Baton Rouge, LA 70801
REPRESENTING ETHYL FOREIGN SALES CORPORATION FOR EXPORT SALES

AGENCY PHONE NUMBER	PRODUCT NAME:	Sodium Bromide 40 Water
4) 344-7147		Treatment
		98.0.8

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MICAL AND PHYSICAL PROPERTIES (Con't)

VAPOR PRESSURE: 17.5 mm Hg @ 20C/68F for aqueous portion of solution.

SOLUBILITY IN WATER: Miscible.

SPECIFIC GRAVITY: 1.41 @ 21C/70F.

PERCENT VOLATILE: 60% water (by weight).

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RE AND EXPLOSION HAZARDS

FLASH POINT(METHOD): Non-flammable.

FLAMMABLE LIMITS: Not applicable.

EXTINGUISHING MEDIA: None required.

HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: Includes bromide.

SPECIAL FIRE FIGHTING PROCEDURES: Avoid breathing fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

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ACTIVITY DATA

STABILITY: Stable.

CONDITIONS TO AVOID: Extremely high heat.

MATERIALS TO AVOID: Strong acids and strong oxidizing agents; corrosive to aluminum.

HAZARDOUS POLYMERIZATION: Will not occur.

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ALTH HAZARDS

INHALATION: Not expected to be a primary route of exposure.

EYE CONTACT: Expected to be an eye irritant.

SKIN CONTACT: Repeated or prolonged skin contact may cause irritation and superficial burns.

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HEALTH HAZARDS (Con't)

INGESTION: Not expected to be a primary route of exposure.

CHRONIC EFFECTS OF OVEREXPOSURE: None known.

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EMERGENCY FIRST AID PROCEDURES

INHALATION: If inhaled, remove to fresh air.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

SKIN CONTACT: Wash contaminated areas with soap and water.

INGESTION: Give two glasses of water. Do not induce vomiting. Get medical attention.

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EXPOSURE CONTROL INFORMATION

EXPOSURE LIMITS: Not established by OSHA/ACGIH.

EYE PROTECTION: Chemical goggles.

PROTECTIVE GLOVES: Resistant to chemical penetration.

RESPIRATORY PROTECTION: None under normal conditions.

LOCAL EXHAUST VENTILATION: Not required.

MECHANICAL VENTILATION: Recommended.

OTHER: If repeated or prolonged skin contact or contamination of clothing is likely, protective clothing should be worn.

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ENVIRONMENTAL PROTECTION

SPILLS OR LEAKS: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Take up small spills with dry chemical absorbent. Large spills may be taken up with pump or vacuum and

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VIRONMENTAL PROTECTION (Con't)

finished off with dry chemical absorbent. May require excavation of contaminated soil.

DISPOSAL METHODS: To the best of Ethyl's knowledge, this product is not regulated by CERCLA/RCRA as a hazardous waste or material. However, this product has not been tested for the toxicity characteristic via the Toxicity Characteristic Leaching Procedure. Please refer to label for disposal method. Contact your Regional Office of EPA for guidance in disposal of this product.

STORAGE REQUIREMENTS: Store in dry, well-ventilated area. Store at temperatures above 50F.

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REGULATORY INFORMATION

TSCA:

THIS MATERIAL IS EXEMPT FROM THE TOXIC SUBSTANCES CONTROL ACT (15 USC 2601-2629).

EPA Reg. No. 3377-25

DOT DESCRIPTION/PROPER SHIPPING NAME:

Not regulated for transportation.

HAZARD CATEGORIES FOR SARA 311/312 REPORTING ARE INDICATED BELOW:

HEALTH	Immediate (Acute)	Yes
HEALTH	Delayed (Chronic)	No
PHYSICAL	Fire	No
PHYSICAL	Sudden Release of Pressure	No
PHYSICAL	Reactive	No
	Nuisance Mist/Dust Only	No

See "Explanation of Terminology" for regulations addressed.

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MSDS prepared by: Health & Environment Department
Ethyl Corporation

FOR ADDITIONAL NONEMERGENCY MSDS INFORMATION, CONTACT:

HEALTH AND ENVIRONMENT DEPARTMENT
ETHYL CORPORATION
451 FLORIDA ST.
BATON ROUGE, LA. 70801
(504) 388-7717

THIS MATERIAL SAFETY DATA SHEET CONTAINS AT LEAST
THE INFORMATION REQUIRED BY THE FEDERAL OSHA HAZARD
COMMUNICATION RULE, 29 CFR 1910.1200(g) (2).

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