OCEAN Network Emergency Phone 1-800-OLIN-911

This material safety sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard, 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard. This information is required to be disclosed for safety in the workplace. The exposure to the community, if any, is quite different.

*01 SECTION 1 PRODUCT IDENTIFICATION

*REVISION NO: 02
*REVISION DATE: 97/04/25
*PRODUCT CODE: HPE851052
*FILE NUMBER: HPE01471.0006
*PRODUCT NAME: PROBIMIDE 9753

SYNONYMS: None
CHEMICAL FAMILY: Polyimide
$FORMULA: Not Applicable/Mixture
USE DESCRIPTION: Protective coating for electronic devices
OSHA HAZARD CLASSIFICATION: Eye, skin and respiratory irritant

*02 SECTION 2 COMPONENT DATA

PRODUCT COMPOSITION
CAS or CHEMICAL NAME: Gamma butyrolactone
CAS NUMBER: 96-48-0
PERCENTAGE RANGE: 75-85%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: None established

CAS or CHEMICAL NAME: Isobenzofurandione, polymer with aminophenyl indene amine
CAS NUMBER: 62929-02-6
PERCENTAGE RANGE: 15-25%
HAZARDOUS PER 29 CFR 1910.1200: No
EXPOSURE STANDARDS: None established

*03 SECTION 3 PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER.

STORAGE CONDITIONS:
STORE AT - 4 TO + 4 DEG.C IN A COOL, DRY, WELL VENTILATED PLACE AWAY FR
ALL SOURCES OF IGNITION.
DO NOT STORE AT TEMPERATURES ABOVE: See Above
PRODUCT STABILITY AND COMPATIBILITY
SHELF LIFE LIMITATIONS: 1 year
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: See Section VII,
"Incompatible Materials".

*04 SECTION 4 PHYSICAL DATA

APPEARANCE: Clear liquid with a mild odor
FREEZING POINT: No Data
BOILING POINT: 205 Deg.C
DECOMPOSITION TEMPERATURE: No Data
SPECIFIC GRAVITY: No Data
BULK DENSITY: No Data
pH @ 25 DEG.C: Not Applicable
VAPOR PRESSURE @ 25 DEG.C: No Data
SOLUBILITY IN WATER: Partial
VOLATILES, PERCENT BY VOLUME: 75-85%
EVAPORATION RATE: < 1 (Butyl acetate = 1)
VAPOR DENSITY: 3 (Air= 1)
MOLECULAR WEIGHT: Not Applicable/Mixture
ODOR: Mild
COEFFICIENT OF OIL/WATER DISTRIBUTION: No Data

*05 SECTION 5 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:
RESPIRATORY PROTECTION: If vapors, mists or aerosols are generated, wear
NIOSH/MSHA approved respirator.

VENTILATION: Use local exhaust ventilation if vapors, mists or aerosols
are generated. Otherwise, use general exhaust ventilation.

SKIN AND EYE PROTECTIVE EQUIPMENT:
Use chemical goggles and impermeable gloves.

EQUIPMENT SPECIFICATIONS (WHEN APPLICABLE):
RESPIRATOR TYPE: NIOSH/MSHA approved organic vapor respirator with a
dust/mist prefilter.
PROTECTIVE CLOTHING TYPE (This includes: gloves, boots, apron,
protective suit): Impervious

*06 SECTION 6 FIRE AND EXPLOSION HAZARD INFORMATION

FLAMMABILITY DATA:
EXPLOSIVE: No
FLAMMABLE: No
COMBUSTIBLE: No
PYROPHORIC: No
FLASH POINT: 98 Deg.C (209 Deg.F) Test Method: Tag closed cup
AUTOIGNITION TEMPERATURE: No Data
FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR): 1.4% - LEL 6.9% - UEL

NFPA RATINGS:
Not Established
HMIS RATINGS:
Health: 2
Flammability: 1
Reactivity: 0

EXTINGUISHING MEDIA:
Regular foam, dry chemical, carbon dioxide, water spray

FIRE FIGHTING TECHNIQUES AND COMMENTS:
Use water to cool containers exposed to fire.
See Section XI for protective equipment for fire fighting.

*07 SECTION 7 REACTIVITY INFORMATION

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:
TEMPERATURES ABOVE: 35 Deg.C (95 Deg.F)
MECHANICAL SHOCK OR IMPACT: No
ELECTRICAL (STATIC) DISCHARGE: No
HAZARDOUS POLYMERIZATION: Will not occur
INCOMPATIBLE MATERIALS: Strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, aldehydes, nitrogen oxides
OTHER CONDITIONS TO AVOID: Ignition sources of any kind

SUMMARY OF REACTIVITY:

EXPLOSIVE:	No
OXIDIZER:	No
PYROPHORIC:	No
ORGANIC PEROXIDE:	No
WATER REACTIVE:	No

*08 SECTION 8 FIRST AID

EYES:

Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

SKIN:

Immediately flush with water for 15 minutes. Wash the contaminated skin with soap and water. If irritation develops, call a physician. If clothing comes in contact with the product, the clothing should be laundered before re-use.

INGESTION:

Immediately drink large quantities of water. Induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION:

If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough product to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

*09 SECTION 9 TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION

Eye and skin contact, ingestion, inhalation.

WARNING STATEMENTS AND WARNING PROPERTIES

MAY BE HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION. DO NOT INHALE MIST OR VAPOR. INHALATION OF MIST OR VAPOR MAY CAUSE RESPIRATORY TRACT IRRITATION. INHALATION OF HIGH CONCENTRATIONS MA CAUSE DIZZINESS AND DROWSINESS.

HUMAN THRESHOLD RESPONSE DATA

ODOR THRESHOLD: No Data
IRRITATION THRESHOLD: No Data

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: No IDLH concentration has been established for this product.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE:

INHALATION

ACUTE:

No significant adverse effects to health would be expected to occur fr inhalation with normal use of this product. If material is spraying or misting, inhalation may cause irritation of the throat, nose, mucous membranes and upper respiratory tract. Any irritation would be transie with no permanent damage expected. Inhalation of high concentrations o mist or vapors in the air may be mildly narcotic and depress the centr nervous system (CNS) with symptoms including headache, dizziness, drowsiness, weakness, fatigue, nausea and vomiting.

CHRONIC:

There are no known or reported effects from chronic exposure except fo effects similar to those experienced from single exposure.

SKIN

ACUTE:

Skin contact may produce mild to moderate irritation consisting of transient redness. This irritant effect would not result in permanent damage. If this product is not washed off and is left on the skin for extended period of time, it may result in a significant amount of the product being absorbed dermally. This may cause narcosis and C.N.S. depression with symptoms similar to those listed under acute inhalatio exposure.

CHRONIC:

There are no known or reported effects from chronic exposure except fo effects similar to those experienced from single exposure.

EYE

Contact with the eyes would be expected to cause moderate to severe irritation consisting of painful stinging or burning sensation of eyes lids, redness, swelling, and mucous discharge to the conjunctiva.

INGESTION

ACUTE:

Ingestion may cause gastrointestinal discomfort. If significant quanti are ingested, may cause C.N.S depression with symptoms similar to thos listed under acute inhalation exposure. Based on the oral LD50, this product may be harmful if swallowed.

CHRONIC:
There are no known or reported effects from chronic exposure except for effects similar to those experienced from single exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
None known or reported.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY:
None known or reported.

ANIMAL TOXICOLOGY
ACUTE TOXICITY:
Inhalation LC 50: No Data
Dermal LD 50: Believed to be > 2 g/kg. (guinea pig), based on constitu
Oral LD 50: Believed to be 1-2 g/kg. (rat), based on constituents
Irritation: Eye and mucous membrane irritant; may be a respiratory and skin irritant

ACUTE TARGET ORGAN TOXICITY:
Irritation of the eyes, mucous membranes, skin and respiratory tract may result from contact with liquid or vapor. Inhalation, ingestion or dermal absorption of significant amounts of this product may result in C.N.S. depression.

Gamma butyrolactone and Isobenzofurandione, polymer with aminophenyl indene amine have been evaluated in laboratory animals and were found to cause allergic skin sensitization.

CHRONIC TARGET ORGAN TOXICITY:
There are no known or reported effects from chronic exposure except fo effects similar to those experienced from single exposure.

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY:
There are no known or reported effects on reproductive function or fet development from exposure to this product.

Gamma butyrolactone has been tested for reproductive toxicity, and the results are the following:
Teratology (Sweden) at 1000 mg/kg./day (days 6-15): Negative
Teratology - rat; graded dose levels from 10-1000 mg/kg./day from day through 15 of gestation: Negative.

CARCINOGENICITY:
This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

IARC Evaluation: Gamma-butyrolactone was tested in mice by oral administration, subcutaneous injection and skin application and in rats by oral and subcutaneous administration. No carcinogenic effects were observed.

NTP (National Toxicology Program) conducted carcinogenesis studies by administering Gamma-butyrolactone in corn oil by gavage to groups of F344/N rats and B6C3F1 mice of each sex for a period of two years. Under the conditions of these studies, there was no evidence of carcinogenic activity of Gamma-butyrolactone in male rats, female rats and female mice. There was equivocal evidence of carcinogenic activity of Gamma-butyrolactone in male mice.

The weight of evidence therefore suggests that exposure to Gamma-butyrolactone would not pose a carcinogenic hazard.

MUTAGENICITY:
This product is not known or reported to be mutagenic. Gamma-butyrolactone has been tested in a battery of 20 mutagenicity assays. It was shown to be non-mutagenic in the majority of assays in which it was tested. Gamma-butyrolactone induced positive responses in four in vitro assays. The weight of evidence of non-mutagenic response several in vitro assays and in an in vivo assay (mouse micronucleus as suggests that exposure to Gamma-butyrolactone should not pose a mutage hazard.

AQUATIC TOXICITY:
No data for product. Individual constituents are as follows:
Gamma-butyrolactone:
Aquatic Toxicity Rating: 0 (96 hr. LC50 > 1000 mg/l).
48 hr. LC 50 Minnow: 100-500 mg/l

*10 SECTION 10 TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT REGULATED AS A DOT HAZARDOUS MATERIAL.

*11 SECTION 11 SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

REPORTABLE QUANTITY: (Per 40 CFR 302.4) Not Applicable

SPILL MITIGATION PROCEDURES:
Evacuation procedures must be placed into effect. Evacuate all non-essential personnel. Hazardous concentrations in air may be found in loc spill area and immediately downwind. Remove all sources of ignition. St source of spill as soon as possible and notify appropriate personnel.

AIR RELEASE: Vapors may be suppressed by the use of water fog or spray. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.

WATER RELEASE: This material is slightly soluble in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so. Continue handle as described in land spill.

LAND SPILL: Create a dike or trench to contain materials. Spill materials may be absorbed using sand, clay or commercial absorbent. Do not place spill materials back in their original containers. Containerize and label all spill materials properly. Decontaminate all clothing and the spill area using soap solution and flush with large amounts of water.

SPILL RESIDUES:
Dispose of per guidelines under Section XII, WASTE DISPOSAL.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:
In case of fire, use a NIOSH/MSHA approved self-contained breathing apparatus (SCBA).

In case of a spill or fire, additional protective clothing must be worn prevent personal contact with this material. Those items include but are not limited to: boots, gloves, impervious clothing, i.e., chemically impermeable suit.

*12 SECTION 12 WASTE DISPOSAL

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D.

As a nonhazardous liquid waste, it should be disposed of in accordance with local, state and federal regulations by incineration.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

*13 SECTION 13 ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:
The components of this product are listed on the Toxic Substance Control Act inventory.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III:
HAZARD CATEGORIES, PER 40 CFR 370.2:
HEALTH:
Immediate (Acute)
PHYSICAL:
None

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:
EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:
None Established

SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:
None Established

*14 SECTION 14 ADDITIONAL INFORMATION

MSDS REVISION STATUS: Revision to Section I, V, IV, IX, XI and XV

*15 SECTION 15 MAJOR REFERENCES

1. Sittig, Marshall, Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Ed., Noyes Publications, Park Ridge, NJ, 1985.
2. Chemical Hazard Response Information System (CHRIS), Vol. II, U.S. Coast Guard, Washington, D.C., 1984.
3. NTP Technical Report on the Toxicology and Carcinogenesis Studies of Gamma-Butyrolactone in F344/N Rats and B6C3F1 Mice (Gavage Studies). NTP-TR-406, March 1992. National Toxicology Program, Research Triangle Park, NC.
4. TOXNET Database, U.S. National Library of Medicine, Bethesda, MD.

5. Benigni, R., et al., Interrelationships Among Carcinogenicity, Mutagenicity, Acute Toxicity, and Chemical Structure in a Genotoxicity Database. Journal of Toxicology and Environmental Health, Vol. 27, pp. 1-20, 1989.
6. deSerres, Frederick, J. and John Ashby, eds., Evaluation of Short-Term Tests for Carcinogens: Report of the International Collaborative Program (Articles #18, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 36, 38, 39, 51, 56, 57, 62 and 66). Progress in Mutation Research, Vol. 1, 1981.
7. Haworth, Steve, et al., Salmonella Mutagenicity Test Results for 250 Chemicals, Environmental Mutagenesis Supplement 1, pp. 3-142, 1983.
8. NTP Technical Bulletin No. 7. National Toxicology Program, Research Triangle Park, N.C., issue no. 7, April 1982.

Additional References are available upon request.

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MATERIAL SAFETY DATA SHEET IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER LISTED BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

OLIN MSDS CONTROL GROUP
Olin Corporation
501 Merritt 7
P.O. Box 4500
Norwalk, CT 06856-4500
Phone Number: (800) 511-MSDS
Chemicals Group