



Arch Chemicals, Inc.

MATERIAL SAFETY DATA

FOR ANY EMERGENCY, CALL 24HOURS/ 7 DAYS:	1-800-654-6911
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC(R):	1-800-424-9300
FOR ALL MSDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS

PRODUCT NAME: **DURIMIDE(TM) 9005**

I. PRODUCT AND COMPANY IDENTIFICATION

REVISION DATE: 10-03-2001
SUPERCEDES: 10-02-2001
MSDS NO: 02206-0001 - 800209
SYNONYMS: RD 99-50; DURIMIDE(TM) 9005ES
CHEMICAL FAMILY: Polyamide mixture
DESCRIPTION / USE: Protective coating for electronic devices
FORMULA: Not applicable/Mixture

Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204

II. COMPOSITION/INFORMATION ON INGREDIENTS

CAS or CHEMICAL NAME	CAS #	% Range
Gamma-butyrolactone	96-48-0	55 - 75
Polyamide	LVE L-00-355	20 - 40
Naphthoquinone ester derivative	PMN-95-1367	2 - 5
Aryl silicic acid	Proprietary	1 - 2

III. HAZARDS IDENTIFICATION

OSHA Hazard Classification: eye irritant, skin irritant, respiratory irritant, central nervous system depressant, possible weak skin sensitizer

Routes of Entry: Inhalation, skin, eyes, ingestion
Chemical Interactions: No known interactions
Medical Conditions Aggravated: Skin diseases including eczema and sensitization

Human Threshold Response Data

Odor Threshold: Not established
Irritation Threshold: Not established

Hazardous Materials Identification System/National Fire Protection Association Classifications

<u>Hazard Ratings:</u>	<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
HMIS	2	1	1
NFPA	Not established		

Immediate (Acute) Health Effects

Inhalation Toxicity: Because of its low volatility, exposure to vapors is unlikely and no significant adverse effects to health will occur from inhalation. However, the inhalation of hot vapors or mist may cause nausea and respiratory tract irritation. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination.

Inhalation Irritation: High concentrations may be slightly irritating to the eyes, nose, throat, and lungs.

Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage.

Skin Absorption: May be absorbed through skin, but it is unlikely that harmful effects will occur unless contact is prolonged, repeated, and extensive. Exposure to large quantities of this product may result in central nervous system (CNS) depression.

Eye Contact May cause severe irritation, consisting of redness, swelling, and mucous membrane discharge to the conjunctiva. Any visual impairment or corneal damage would be expected to clear within several days.

Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea.

Ingestion Toxicity: Moderately toxic if swallowed.

Acute Target Organ Toxicity: Central nervous system

Prolonged (Chronic) Health Effects

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

Reproductive and Developmental Toxicity: Not known or reported to cause reproductive or developmental toxicity.

Sensitization: May cause allergic skin sensitization in some individuals.

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

Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis.

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

Chronic Target Organ Toxicity: Skin

Supplemental Health Hazard Information: No additional health information available.

IV. FIRST AID

Inhalation: IF INHALED: Remove individual to fresh air. If respiratory irritation develops, call a physician.

Skin Contact: IF ON SKIN: Immediately flush skin with plenty of water for 15 minutes. If clothing comes in contact with the product, the clothing should be removed immediately and laundered before re-use. Call a physician.

Eyes: IF IN EYES: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids apart. Call a physician immediately.

Ingestion: IF SWALLOWED: Immediately drink water to dilute. Consult a physician if symptoms develop. Never give anything by mouth to an unconscious person.

V. FIRE FIGHTING MEASURES

Flammability Summary (OSHA): Product is not known to be flammable, combustible, pyrophoric or explosive.

Flammable Properties

Flash Point: 98 Deg. C. / 209 Deg. F. (Test Method: Cleveland Closed Cup)

Autoignition Temperature: No data

Upper Flammable/Explosive Limit, % in air: Not established

Lower Flammable/Explosive Limit, % in air: Not established

Fire/Explosion Hazards: Material may be ignited only if preheated to high temperatures, for example in a fire.

Extinguishing Media: Use alcohol foam, carbon dioxide, dry chemical or water spray when fighting fires.

Fire Fighting Instructions: In case of fire, use normal fire fighting equipment including a NIOSH approved self-contained breathing apparatus (SCBA). Use water to cool containers.

Hazardous Combustion Products: carbon monoxide, carbon dioxide, oxides of nitrogen

VI. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations: Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, impervious gloves, hard hat, splash-proof goggles, impervious clothing, i.e., chemically impermeable suit, self-contained breathing apparatus.

Spill Mitigation Procedures

Air Release: Hazardous concentrations in air may be found in local spill area and immediately downwind. Vapors may be suppressed by the use of water fog. Contain all liquid for treatment or neutralization.

Water Release: Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so.

Land Release: Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Decontaminate all clothing and the spill area using a detergent and flush with large amounts of water. Contain all contaminated water for disposal and/or treatment. Do not place spill materials back in their original containers.

Additional Spill Information: Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section XIII, Disposal Consideration.

VII. HANDLING AND STORAGE

Handling: Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Avoid breathing mist or vapor.

Storage: Store in a cool, dry and well ventilated place. Isolate from incompatible materials. Store in a tightly closed container. Do not expose to direct light.

Shelf Life Limitations: See label or certificate of analysis for shelf life if applicable.

Incompatible Materials for Storage: Refer to Section X, "Incompatible Materials."

Do Not Store At temperatures Above: 5 Deg. F. -15 Deg. C.

Do Not Store At Temperatures Below: -4 Deg. F. -20 Deg. C.

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Local exhaust ventilation is recommended if vapors, mists or aerosols are generated. Otherwise, use general exhaust ventilation.

Protective Equipment for Routine Use of Product

Respiratory Protection: Respiratory protection not normally needed since volatility and toxicity are low. If vapors, mists or aerosols are generated, wear a NIOSH approved respirator.

Respirator Type(s): NIOSH approved air purifying respirator with organic vapor cartridge and dust/mist filter. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin: Wear impermeable gloves. When exposure to high concentrations are prolonged or repeated use protective boots and apron in addition to gloves.

Eyes: Use chemical goggles.

Protective Clothing Type: Impervious

Exposure Limit Data

CHEMICAL NAME	CAS #	OSHA PEL / STEL	ACGIH LIMITS	ACGIH WEEL
No data				

CHEMICAL NAME NIOSH Immediately Dangerous to Life or Health:
The IDLH has not been established for this product.

IX. PHYSICAL DATA

Physical State: clear liquid

Color: red

Odor: mild

Molecular Weight: Not Applicable/Mixture

Octanol/Water Coeff: No data

Solubility in Water: Moderately soluble

Bulk Density: No data

Specific Gravity: No data

Vapor Density: 3.00 (air =1)

Vapor Pressure: No data

Evaporation Rate: < 1.00 (n-Butyl acetate = 1)

Boiling Point:	205 Deg. C. 401 Deg. F.
Freezing Point:	No data
Volatiles, % by vol.:	55 - 75 %
VOC Content % w/w / lbs/gal:	No Data / No Data
HAP Content % w/w / lbs/gal:	No Data / No Data

X. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions. Not sensitive to static discharge. Not sensitive to mechanical shock.
Reactive Properties:	Stable under normal conditions.
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Temperatures above the flash point in combination with sparks, open flames, or other sources of ignition.
Chemical Incompatibility:	strong oxidizing agents
Hazardous Decomposition Products:	carbon dioxide, carbon monoxide, aldehydes, oxides of nitrogen
Decomposition Temperature:	No data

XI. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:	
Gamma-butyrolactone	Oral LD50 Rat = 1.5 g/kg
Dermal LD50 value:	
Gamma-butyrolactone	Dermal LD50 Guinea pig > 5 g/kg
Inhalation LC50 value:	No data

Product Animal Toxicity

Oral LD50 value:	Oral LD50 Rat Believed to be 1.5 g/kg
Dermal LD50 value:	Dermal LD50 Guinea pig Believed to be > 5 g/kg
Skin Irritation:	This material is expected to be moderately irritating.
Eye Irritation:	This material is expected to be severely irritating.
Reproductive and Developmental Toxicity:	Not known or reported to cause reproductive or developmental toxicity.
Component Data:	
Gamma-butyrolactone	This chemical has been tested in laboratory animals and no evidence of teratogenicity was seen.
Mutagenicity:	Not known or reported to be mutagenic.
Component Data:	
Gamma-butyrolactone	This material has been shown to be non-mutagenic in the majority of a battery of assays. Not expected to be a mutagenic hazard.
Naphthoquinone ester derivative	This material was non-mutagenic in the Ames test.
Carcinogenicity:	This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.
Component Data:	
Gamma-butyrolactone	The carcinogenicity has been evaluated through animal study and it was found not to be carcinogenic in most studies and equivocal in at least on study. Exposure would not be expected to pose a carcinogenic hazard.

XII. ECOLOGICAL INFORMATION

Ecological Toxicity Values:

Gamma-butyrolactone Fathead minnow (*Pimephales promelas*), 48 hr. LC50: = 100 - 500 mg/l.
96 hr. LC50: > 1000 mg/l.

XIII. DISPOSAL CONSIDERATIONS

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.

Waste Disposal Summary: 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.

Potential US EPA Waste Codes: Not applicable

Disposal Methods: As a nonhazardous waste, it should be disposed of in accordance with local, state and federal regulations.

Components subject to land ban restrictions: No components subject to land ban restrictions.

XIV. TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT Description (49 CFR 172.101):

Land (U.S. DOT): Not Regulated

Air (IATA/ICAO): Not Regulated

Water (IMO): Not Regulated

XV. REGULATORY INFORMATION

UNITED STATES:

Toxic Substances Control Act (TSCA): The components of this product are either listed on the Toxic Substances Control Act Chemical Substances Inventory or are introduced into commerce in accordance with the provisions of a low volume PMN exemption notification.

Pesticide acceptance indication: US EPA Registration Number: Not applicable

Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311/312 (40 CFR 370.2):

Health: Acute

Physical: None

Emergency Planning & Community Right to Know (40 CFR 355, App. A):

Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:
Not applicable

Reportable Quantity (40 CFR 302.4):
None listed

Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components
No 313-listed chemicals in this
product

Clean Air Act Socmi: Butyrolactone

State Right-to-Know Regulations Status of Ingredients

Pennsylvania:	Not listed
New Jersey:	Not listed
Massachusetts:	Not listed

XVI. ADDITIONAL INFORMATION

MSDS REVISION

STATUS:

Section(s) Revised: 1, 2, 3, 5, 8, 9, 11, 15

MAJOR REFERENCES:

- 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.
- TOXNET Database, U.S. National Library of Medicine, Bethesda, MD.
- 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.
- 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.
- NTP Technical Bulletin No. 7. National Toxicology Program, Research Triangle Park, N.C., issue no. 7, April 1982.
- Haworth, Steve, et al., Salmonella Mutagenicity Test Results for 250 Chemicals, Environmental Mutagenesis Supplement 1, pp. 3-142, 1983. NTP Technical Bulletin No. 7. National Toxicology Program, Research Triangle Park, N.C., issue no. 7, April 1982.

Other references available upon request.

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