

G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME-----> **Phthalic Anhydride**

PRODUCT NUMBER(S)-----> 231300 - Flake; 231500 - Molten

TRADE NAMES AND SYNONYMS--> 1,3 Isobenzofurandione, Phthalic Acid Anhydride, 1,2 Benzenedicarboxylic acid anhydride

CAS-No: 85-44-9

CHEMICAL FAMILY: Anhydride

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

RECOMMENDED USE: Industrial: Monomer, Intermediate, Use in coatings, Manufacture of substances, Laboratory chemicals, Distribution.

USES ADVISED AGAINST: No information available

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: **G.J. CHEMICAL CO., INC.**

Address: **40 VERONICA AVENUE
SOMERSET, NJ 08873**

Telephone: **1-973-589-1450**

Fax: **1-973-589-3072**

1.4 Emergency Telephone Number

Emergency Phone: **1-800-424-9300 (CHEMTREC)**

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318

Respiratory sensitization (Category 1), H334

Skin sensitization (Category 1), H317

Specific target organ toxicity - single exposure (Category 3), Respiratory System, H335

Acute aquatic toxicity (Category 3), H402

2.2 GHS Label elements, including precautionary statements



Signal word **DANGER**

Hazard statement(s)

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H402 Harmful to aquatic life.

Precautionary statement(s)

Prevention:

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear eye protection/ face protection.

P280 Wear protective gloves.

P285 In case of inadequate ventilation wear respiratory protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

P362 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. INGREDIENTS

3.1 SUBSTANCE:

Ingredient	CAS No.	% by WT. Range	CLASSIFICATION
Phthalic Anhydride	85-44-9 EC-No.201-607-5 Index-No.607-009-00-4 Reg.-No. 01-2119457017-41-XXXX	99 +	Acute toxicity, Oral (Category 4), H302 Skin irritation (Category 2), H315 Serious eye damage (Category 1), H318 Respiratory sensitization (Category 1), H334 Skin sensitization (Category 1), H317 STOT-SE (Category 3), Respiratory System, H335 Acute aquatic toxicity (Category 3), H402
Maleic anhydride	108-31-6 EC-No.203-571-6 Index-No.607-096-00-9 Reg.-No. 01-2119472428-31-XXXX	<0.05	Acute toxicity, Oral (Category 4), H302 Skin corrosion (Category 1B), H314 Serious eye damage (Category 1), H318 Respiratory sensitization (Category 1), H334 Skin sensitization (Category 1), H317 STOT-RE (Category 1), Respiratory system, Inhalation, H372 Acute aquatic toxicity (Category 3), H402

3.2 MIXTURE: Not applicable.

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: PHTHALIC ANHYDRIDE

Remove from exposure, restore breathing. Keep warm and quiet.

Immediately notify physician.

EYES (SPLASH): PHTHALIC ANHYDRIDE`

Immediately flush eyes with water for 15 minutes. Remove contact lenses, if worn, after initial flushing. Hold eyelids open for complete irrigation. Immediately get medical attention.

SKIN (SPLASH): PHTHALIC ANHYDRIDE

Wipe off excess material from skin then wash affected area with plenty of soap and water for at least 15 minutes.

Remove contaminated clothing. Consult a physician if irritation persists.

INGESTION: PHTHALIC ANHYDRIDE

Do Not Induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Immediately contact a physician or poison control center, treat symptomatically.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Eye: Conjunctival edema and corneal destruction can occur; Symptoms include pain, tearing, and photophobia. Dust or vapor causes burns or irritation of the eyes with swelling.

Skin: Corrosive; Symptoms of redness, pain, and severe burn can occur.

Inhalation: Inhalation of vapor, fume, or dust is a primary irritant. Coughing, choking, as well as headache and dizziness can occur. May cause allergic respiratory reactions.

Ingestion: Corrosive, Swallowing can cause severe burns of the mouth, throat and stomach. Can cause sore throat, vomiting, diarrhea.

Chronic: Exposure by inhalation or skin contact can cause allergic sensitization. Causes liver and kidney effects in laboratory animals.

Medical Conditions Aggravated by Exposure: Persons with pre-existing Skin disorders or impaired respiratory function may be more susceptible to the effects of the substance.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

Specific details on antidote: No recommendation given.

5. FIRE FIGHTING MEASURES

Flash Point: 152°C (306°F)

LEL %: 1.7

Auto-ignition Temp: 580°C (1076°F)

UEL %: 10.4

5.1 SUITABLE EXTINGUISHING MEDIA: Foam--> x CO2--> x Dry Chemical-->
x Water-fog--> x Other-->

Unsuitable extinguishing media: Do not use waterjet.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR

MIXTURE: Fine dust dispersed in air in sufficient concentration: 0.015oz/ft³. The ignition temperature for the dust cloud is 1202°F (650°C). Making the air inert, with CO₂, to below 14% oxygen will prevent dust explosions.

CONDITIONS OF FLAMMABILITY: Not flammable or combustible.

HAZARDOUS COMBUSTION PRODUCTS: Solid sublimates and gives off flammable vapors when heated.

5.3 ADVICE FOR FIREFIGHTERS: Solid; Shut off source. Wear NIOSH/MSHA approved self-contained positive pressure breathing apparatus (SCBA) for confined spaces and where there is exposure to vapors. Use full fire-fighting protective clothing. Water or foam may cause frothing.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Eliminate ignition sources in the vicinity of the spill or released vapor. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations.

6.2 ENVIRONMENTAL PRECAUTIONS:

Keep out of water sources, drains and sewers. Do not flush into surface water or sanitary sewer system.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Methods for cleanup and containment:

Use explosion proof equipment. Clean up spills in a manner that does not disperse dust into the air. Reduce airborne dust and prevent scattering by moistening with water.

Methods for disposal:

Pick up spill for recovery or disposal and place in a closed container. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations.

REPORTABLE QUANTITY (RQ): 5000 POUNDS

The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the national response center must be notified immediately at (800) 424-8882 or (202) 426-2675 in the metropolitan Washington, D. C. area (40 CFR 302.6).

6.4 REFERENCE TO OTHER SECTIONS: See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: Use personal protective equipment. Avoid contact with skin and eyes. Avoid dust formation. Avoid breathing vapors, mist or gas. Eliminate ignition sources in the vicinity of the spill or released vapor. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations. Avoid work practices that may release dust in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers. Further Processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Advice on general occupational hygiene:
Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

STATIC HAZARD: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not be sufficient. For more information refer to National Fire Protection Association (NFPA 77) "Recommended Practice on Static Electricity".

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Follow maximum allowed pile heights specified in the BOCA codes or the NFPA manual. Local fire authorities should be notified for storage of this material in any quantity. Local permits are required for storage in warehouse quantities. Reacts with moisture to give phthalic acid, which can corrode metals, liberating hydrogen. Recommended storage temperature: 15 - 25°C. Store large quantities only in cool, dry areas in buildings designed to comply with OSHA 1910.106. Do not contact with oxidizing materials. Keep containers closed when not in use. Do not take internally.

CONTAINER WARNINGS: Empty only into inert or non-flammable atmosphere. Metal containers should be Bonded and Grounded when pouring. Emptying contents into a non-inert atmosphere where flammable vapors may be present could cause a flash fire or explosion due to electrostatic discharge. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" containers should be completely drained.

7.3 SPECIFIC END USES: Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

8.1 CONTROL PARAMETERS:

Ingredient	CAS No.	% by WT. Range	Exposure Limits
Phthalic Anhydride	85-44-9 EC-No.201-607-5 Index-No.607-009-00-4 Reg.-No. 01-2119457017-41-XXXX	99-100	1ppm TWA (ACGIH) 1ppm TWA (NIOSH) 2ppm TWA (OSHA) 60mg/m3 (IDLH)
Maleic anhydride	108-31-6 EC-No.203-571-6 Index-No.607-096-00-9 Reg.-No. 01-2119472428-31-XXXX	<0.05	0.01ppm TWA (ACGIH) 0.25ppm TWA (OSHA) 0.25ppm TWA (NIOSH)

Key: (PEL) = Permissible Exposure Limit OSHA
(TLV) = Threshold Limit Value OSHA & ACGIH
(STEL) = Short Term Exposure Limit ACGIH
(WEEL) = USA. Workplace Environmental Exposure Levels
(TWA) = Time Weighted Average
CAS = Chemical Abstracts Registry Number
IDLH = Immediate Danger to Life and Health
N.E. =None Established

8.2 EXPOSURE CONTROLS

EXPOSURE GUIDELINES: Consider the potential hazards of this material (Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

ENGINEERING CONTROLS: Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

RESPIRATORY PROTECTION: The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational

Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

For known vapor concentrations use a NIOSH/MSHA air purifying respirator with full face-piece and organic vapor cartridge and particulate filter for exposures >1 <10 times ACGIH TWA. For exposures greater than 10 times ACGIH TWA or for unknown vapor concentrations use positive pressure self-contained breathing apparatus (SCBA) with full face-piece.

BODY CLOTHING: Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged contact with this substance. Use chemical resistant apron or other impervious clothing. Remove and wash contaminated clothing before reuse. Users should determine acceptable performance characteristics of protective clothing.

SKIN PROTECTION: Employee must wear appropriate protective gloves to prevent contact with this substance.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

HYGIENE: Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

EYE/FACE PROTECTION: Use safety eyewear with splash-guards or face shield. Contact lenses should not be worn.

Emergency shower and eyewash should be easily accessible to the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Phthalic Anhydride 85-44-9

Appearance-----> Thin flakes

Color-----> white

Odor-----> Characteristic choking odor

Odor Threshold-----> No data available

pH-----> 2 at 6 g/l at 20°C (68°F)

Molecular Weight-----> 148.12amu

Melting Range-----> 131 - 134°C (268 - 273°F)

Boiling Range -----> 284°C (543°F)

Specific Gravity-----> 1.53g/cm³ @20°C (68°F)
Vapor Pressure-----> 0.0002 mmHg@20°C (68°F)
Vapor Density (air=1)-----> 6.6
Water Solubility-----> 16.4g/L @ 20°C (68°F)
Partition Coefficient n-Octanol/Water-> log Pow: 1.6 at 20°C (68°F)
Evaporation Rate (Butyl Acetate=1)----> No data available
Flash Point-----> 152°C (306°F) - closed cup
Upper Flammability Limit-----> 10.4% (V)
Lower Flammability Limit-----> 1.7% (V)
Auto-Ignition Temperature-----> 580°C (1076°F)
Decomposition Temperature-----> No data available
Viscosity-----> No data available
Explosive Properties-----> No data available
Oxidizing Properties-----> No data available

9.2 Other Information:

Surface Tension-----> 32.7 mN/m at 180°C (356°F)

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available.

10.2 CHEMICAL STABILITY: Unstable () Stable (X)
Stable under recommended storage conditions.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS: No data available

HAZARDOUS POLYMERIZATION: May occur () Will not occur (X)

10.4 CONDITIONS TO AVOID: Avoid moisture, when molten it should be covered with inert gas.

10.5 INCOMPATIBLE MATERIALS: Strong oxidants such as nitric acid, sodium nitrite, copper oxide.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide, and other decomposition products where combustion is not complete. Slowly reacts with water to form phthalic acid. When dissolving in water it is a strong acid.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x Eye--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Contact with water causes formation of phthalic acid, which is responsible for the corrosive effects.

Eye> Conjunctival edema and corneal destruction can occur; Symptoms include pain, tearing, and photophobia. Dust or vapor causes burns or irritation of the eyes with swelling.

Skin> Corrosive; Symptoms of redness, pain, and severe burn can occur.

Inhalation> Inhalation of vapor, fume, or dust is a primary irritant. Coughing, choking, as well as headache and dizziness can occur. May cause allergic respiratory reactions.

Ingestion> Corrosive, Swallowing can cause severe burns of the mouth, throat and stomach. Can cause sore throat, vomiting, diarrhea.

Chronic: Exposure by inhalation or skin contact can cause allergic sensitization. Causes liver and kidney effects in laboratory animals.

Medical Conditions Aggravated by Exposure> Persons with pre-existing Skin disorders or impaired respiratory function may be more susceptible to the effects of the substance.

ACUTE TOXICITY:

The effects of overexposure shown in Section II are based on acute toxicity profiles. Typical values are:

Ingredient	Oral LD 50(Rat)	Skin LD50(Rabbit)	Inhalation LC50
Phthalic Anhydride	1530mg/kg	10000mg/kg	2.14mg/L/4hr (OECD Test 403)
Maleic anhydride	1090mg/kg (OECD Test 401)	2620mg.kg	>4.35mg/L/1 hr

Phthalic Anhydride –

SKIN CORROSION/IRRITATION: Skin –Rabbit Result- Mild skin irritation – 24 h
SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Moderate eye irritation. (Draize Test)

RESPIRATORY OR SKIN SENSITIZATION: Maximization Test - Guinea pig May cause allergic skin reaction. (OECD Test Guideline 406) in vivo assay - Guinea pig May cause allergic respiratory reaction

MUTAGENIC EFFECTS: Reverse mutation assay *S. typhimurium* Result: negative
CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No data available

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): Inhalation - May cause respiratory irritation.

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): no data available

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL INFORMATION: Prolonged or repeated exposure can cause: Liver injury may occur., Kidney injury may occur., Exposure to and/or consumption of alcohol may increase toxic effects.

Maleic Anhydride –

SKIN CORROSION/IRRITATION: Skin - Rabbit Result: Causes burns. - 4 h

SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Corrosive

RESPIRATORY OR SKIN SENSITIZATION: Result: May cause sensitization by inhalation.

Buehler Test – Guinea pig

Result: May cause sensitization by skin contact. (OECD Test Guideline 406)

MUTAGENIC EFFECTS: Ames test *Salmonella typhimurium* Result: negative (OECD Test Guideline 475). Rat - male and female Result: negative

CARCINOGEN STATUS: Carcinogenicity - Rat - Subcutaneous Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Tumorigenic: Tumors at site or application.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: Rat – Oral: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per# females mated). Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile non-pregnant females).

Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Developmental Toxicity - rat - Oral

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): Inhalation - Causes damage to organs through prolonged or repeated exposure. - Respiratory system

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL INFORMATION: Cough, Shortness of breath, Headache, Nausea, Vomiting.

12. ECOLOGICAL INFORMATION

DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS

May be dangerous if it enters water intakes.

Notify local health and pollution control officials.

Notify operators of nearby water intakes

Phthalic Anhydride -

12.1 AQUATIC TOXICITY:

Toxicity to fish:

LC50 - Danio rerio (zebra fish) - 560 mg/l - 7 d

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna (Water flea) - > 640 mg/l - 48 h

Toxicity to algae:

EC50 - Pseudokirchneriella subcapitata (green algae) - 60 - 350 mg/l - 96

12.2 **PERSISTANCE AND DEGRADABILITY:** Biotic/Aerobic - Exposure time 14 d

Result: 85 % - Readily biodegradable; (OECD Test Guideline 301)

12.3 BIOACCUMULATIVE POTENTIAL:

Octanol/Water Partition Coefficient: log Pow: 1.6

This material is not expected to significantly bioaccumulate.

Biological Oxygen Demand (BOD): No data available

Bio-concentration Factor (BCF): <100

12.4 **MOBILITY IN SOIL:** No data available

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: Harmful to aquatic life

Maleic Anhydride -

DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS

May be dangerous if it enters water intakes.

Notify local health and pollution control officials.

Notify operators of nearby water intakes

12.1 AQUATIC TOXICITY:

Toxicity to fish:

LC50 - Oncorhynchus mykiss (rainbow trout) - 75 mg/l - 96 h static test

LC50 - *Gambusia affinis* (Mosquito fish) - 230 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - *Daphnia magna* (Water flea) - 333 mg/l - 48 h static test

Toxicity to algae:

EC50 *Selenastrum capricornutum* (green algae) - > 150 mg/l - 72 h growth inhibition (OECD Test Guideline 201)

Toxicity to bacteria:

EC10 - *Pseudomonas putida* - 44.6 mg/l - 18 h (DIN 38 412 Part 8)

12.2 PERSISTENCE AND DEGRADABILITY: Biotic/Aerobic - Exposure time 28 d

Result: 73 - 81 % - Readily biodegradable.

Biological Oxygen Demand (BOD): No data available

Bio-concentration Factor (BCF): <100

12.3 BIOACCUMULATIVE POTENTIAL: Octanol/Water Partition Coefficient:

log Pow: -2.61

This material is not expected to significantly bioaccumulate.

12.4 MOBILITY IN SOIL: No data available.

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: Harmful to aquatic life

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS: Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment, and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations.

CONTAMINATED PACKAGING: Dispose of as unused product.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

RCRA: The unused product is a RCRA hazardous waste if discarded. The RCRA ID number is: Phthalic Anhydride - U190; Maleic anhydride – U147

If the waste is a spent solvent, the appropriate spent solvent code should be used.

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 48 CFR 262

14. TRANSPORT INFORMATION

Land Transport (DOT)

- 14.1 USDOT ID Number-----> UN3077
14.2 USDOT Shipping Name-----> Environmentally hazardous substances,
solid, n.o.s. (Phthalic anhydride)
14.3 USDOT Hazard Classification-----> 9
USDOT Label Codes-----> 9
14.4 USDOT Package Code-----> III
14.5 Marine Pollutant-----> No
14.6 Special precautions for user-----> None
Emergency Response Guide-----> 171
Reportable quantity-----> 5000lbs.

Sea Transport (IMDG)

- 14.1 ID Number----->
14.2 Proper shipping name-----> NOT DANGEROUS GOODS
14.3 Hazard Classification----->
Label Codes----->
14.4 Package Code----->
14.5 Marine Pollutant----->
14.6 Special precautions for user----->
EMS-Number----->

Air Transport (IATA)

- 14.1 ID Number----->
14.2 Proper shipping name-----> Not Dangerous Goods
14.3 Hazard Classification----->
Label Codes----->
14.4 Package Code----->
14.5 Environmental hazard----->
14.6 Special precautions for user----->

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed

SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Listed

Phthalic anhydride CAS-No.85-44-9 and Maleic anhydride CAS-No.108-31-6

SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health Hazard, Chronic Health Hazard

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

**SECTION 102(A) Hazardous Substances (40 CFR 302.4)- Listed
Phthalic anhydride CAS-No.85-44-9 Reportable Quantity – 5000lbs.
Maleic anhydride CAS-No.108-31-6 Reportable Quantity – 5000lbs.
SECTION 101(14) Reportable Quantity: 5000lbs.**

**Massachusetts Right to Know Components
Phthalic anhydride CAS-No.85-44-9
Maleic anhydride CAS-No.108-31-6**

**Pennsylvania Right to Know Components
Phthalic anhydride CAS-No.85-44-9
Maleic anhydride CAS-No.108-31-6**

**New Jersey Right to Know Components
Phthalic anhydride CAS-No.85-44-9
Maleic anhydride CAS-No.108-31-6**

**California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.**

TSCA (Toxic Substance Control Act)

Phthalic anhydride CAS-No.85-44-9 and Maleic anhydride CAS-No.108-31-6 are listed on the TSCA Inventory.

International Inventories:

<u>Country or Region</u>	<u>Inventory Name</u>	<u>On inventory yes/no</u>
<u>Australia</u>	Australian Inventory of Chemical Substances (AICS)	Yes
<u>Canada</u>	Domestic Substances List (DSL)	Yes
<u>Canada</u>	Non-Domestic Substances List (NDSL)	No
<u>China</u>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<u>Europe</u>	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
<u>Europe</u>	European List of Notified Chemical Substances (ELINCS)	No
<u>Japan</u>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<u>Japan</u>	Industrial Safety & Health Law Inventory (ISHL)	Yes
<u>Korea</u>	Existing Chemicals List (ECL)	Yes
<u>Mexico</u>	National Inventory of Chemical Substances (INSQ)	Yes

<u>New Zealand</u>	New Zealand Inventory	Yes
<u>Philippines</u>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<u>Switzerland</u>	Inventory of Notified New Substances (CHINV)	Yes
<u>Taiwan</u>	National Existing Chemical Inventory (NECI)	Yes
<u>United States & Puerto Rico</u>	Toxic Substances Control Act Inventory	Yes

15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has been carried out for this substance.

16. OTHER INFORMATION:

HMIS (Hazardous Materials Identification System)

Hazard Rating:

4-Extreme

3-High

2-Moderate

1-Slight

0-Insignificant

NFPA RATINGS (SCALE 0-4): Health=2 Fire=1 Reactivity=0
HMIS RATINGS (SCALE 0-4): Health=2 Fire=1 Reactivity=0 PPE=J

Hazard statement(s) from Section 2 and 3:

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H402 Harmful to aquatic life.

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Prepared by-----> T.G. Fenstermaker

Acronyms:

ACGIH	-	American Conference of Governmental Industrial Hygienists
AIHA	-	American Industrial Hygiene Association
ANSI	-	American Nation Standards Institute
API	-	American Petroleum Institute
CERCLA	-	Comprehensive Emergency Response, Compensation, and Liability Act
DOT	-	U.S. Department of Transportation
EC-50	-	Effective Concentration
EPA	-	U.S. Environmental Protection Agency
HMIS	-	Hazardous Materials Information System
IARC	-	International Agency For Research On Cancer
LD-50	-	Lethal Dose
MAK	-	Germany Maximum Concentration Values

MSHA	-	Mine Safety and Health Administration
NFPA	-	National Fire Protection Association
NIOSH	-	National Institute of Occupational Safety and Health
NOIC	-	Notice of Intended Change (Proposed change to ACGIH TLV)
NTP	-	National Toxicology Program
OPA	-	Oil Pollution Act of 1990
OSHA	-	U.S. Occupational Safety & Health Administration
PEL	-	Permissible Exposure Limit (OSHA)
RCRA	-	Resource Conservation and Recovery Act
REL	-	Recommended Exposure Limit (NIOSH)
SARA	-	Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA	-	Self-Contained Breathing Apparatus
STEL	-	Short-Term Exposure Limit (generally 15 minutes)
TLV	-	Threshold Limit Value
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average (8hr.)
WHMIS	-	Canadian Workplace Hazardous Materials Information System

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