



# SAFETY DATA SHEET

Issue Date 15-November-2001

Revision Date 18-August-2020

Version 3

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Product Identifier

Product Name LINDRIDE 5

### Other Means of Identification

SDS # LC-014

### Recommended Use of the Chemical and Restrictions on Use

Recommended Use Epoxy curing agent for high performance composites and electronics

### Details of the Supplier of the Safety Data Sheet

#### Supplier Address

Lindau Chemicals, Inc.  
731 Rosewood Drive  
Columbia, SC 29201

### Emergency Telephone Number

#### Company Phone Number

Phone: 1-803-799-6863

Fax: 1-803-256-3639

#### Emergency Telephone

INFOTRAC 01-352-323-3500 (International)

1-800-457-4280 (North America)

## 2. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** The information below relates to repeated and prolonged exposure, particularly where exposure is to the vapor form of the substance. The supplier has indicated that eye exposure normally results in eye irritation.

### Classification

Serious Eye Damage/Eye Irritation	Category 1
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1

### Signal Word

**Danger**

### Hazard Statements

H318: Causes serious eye damage

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

H317: May cause an allergic skin reaction



**Appearance** Dark amber liquid

**Physical State** Liquid

**Odor** Characteristic

#### **Precautionary Statements - Prevention**

P261: Avoid breathing fumes or vapors.

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

P280: Wear protective gloves, protective clothing and eye protection.

P284: In case of inadequate ventilation wear respiratory protection.

#### **Precautionary Statements - Response**

P305 + P351: IF IN EYES: Rinse cautiously with water for several minutes.

P338: Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER or doctor/physician.

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

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

P362 + P364: Take off contaminated clothing and wash it before reuse.

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

#### **Precautionary Statements - Disposal**

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

#### **Hazards Not Otherwise Classified (HNOC)**

Causes mild skin irritation

#### **Other Hazards**

Harmful to aquatic life with long lasting effects

Harmful to aquatic life

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Methyltetrahydrophthalic anhydride	34090-76-1	> 55
Tetrahydrophthalic anhydride	85-43-8	10–30
Phthalic anhydride	85-44-9	1–10
1-(2-Hydroxypropyl) imidazole	37788-55-9	1–5

\*\* If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### 4. FIRST AID MEASURES

#### **First Aid Measures**

##### **Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, call a physician.

##### **Eye Contact**

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get immediate medical advice/attention.

##### **Ingestion**

Call immediately a physician or your local Poison Control Center.

##### **Skin Contact**

Wash with soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

**Most Important Symptoms and Effects, both Acute and Delayed**

**Symptoms** Contact may cause irritation and redness. Direct eye contact may cause stinging, tearing and redness. May cause irritation to the mucous membranes and upper respiratory tract.

**Indication of any Immediate Medical Attention and Special Treatment Needed**

**Note to Physicians** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES****Extinguishing Media**

**Suitable Media** Dry chemical, carbon dioxide (CO<sub>2</sub>), water spray (fog)

**Unsuitable Media** Not determined

**Specific Hazards Arising from the Chemical**

Burning may produce irritating vapors, carbon monoxide and/or carbon dioxide.

**Hazardous Combustion Products** Carbon monoxide, carbon dioxide

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES****Personal Precautions, Protective Equipment and Emergency Procedures**

**Personal Precautions** Use personal protective equipment as required. Remove all sources of ignition. Ensure adequate ventilation.

**Environmental Precautions** Avoid subsoil penetration. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

**Methods and Material for Containment and Cleaning Up**

**Methods for Containment** Provide ventilation and respirator if needed. Flush area with water/soda ash. Keep flames away. Avoid subsoil penetration. Do not let product enter drains or contaminate surface water.

**Methods for Cleaning Up** Absorb spillage with non-combustible, absorbent material. Dispose of in accordance with federal, state and local regulations. Flush area with water and soda ash.

**7. HANDLING AND STORAGE****Precautions for Safe Handling**

**Advice on Safe Handling** Use only in well-ventilated areas. Use personal protection recommended in Section 8. Avoid breathing vapors. Do not take contaminated clothing out of the workplace.

**Conditions for Safe Storage, Including any Incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Store at temperatures above 50°F (10°C) to prevent crystallization.

**Packaging Materials** Do not transfer to unmarked containers.

**Incompatible Materials** Alcohols, alkalis, water

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL
Phthalic anhydride 85-44-9	TWA: 1 ppm TWA: 6.1 mg/m <sup>3</sup>	TWA: 2 ppm TWA: 12 mg/m <sup>3</sup> (vacated) TWA: 1 ppm (vacated) TWA: 6 mg/m <sup>3</sup>	IDLH: 60 mg/m <sup>3</sup> TWA: 1 ppm TWA: 6 mg/m <sup>3</sup>

### Control Parameters

**Engineering Controls** Apply technical measures to comply with the occupational exposure limits.

### Individual Protection Measures, such as Personal Protective Equipment

**Eye/Face Protection** Wear approved safety goggles.

**Skin and Body Protection** Wear chemical resistant, impermeable gloves. Wear suitable protective clothing.

**Respiratory Protection** Ensure adequate ventilation, especially in confined areas.

**General Hygiene** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

<b>Physical State</b>	Liquid	<b>Odor</b>	Characteristic
<b>Appearance</b>	Dark amber liquid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Dark amber		
<b>Property</b>	<b>Values</b>	<b>Remarks/Method</b>	
<b>pH</b>	Not determined		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	> 307 °C / > 585 °F	ASTM D-86	
<b>Flash Point</b>	> 135 °C / > 275 °F	(PM)	
<b>Evaporation Rate</b>	zero	(butyl acetate = 1)	
<b>Flammability (Solid, Gas)</b>	n/a-liquid		
<b>Upper Flammability Limit</b>	Not applicable		
<b>Lower Flammability Limit</b>	Not applicable		
<b>Vapor Pressure</b>	0 mm Hg	@ 15 °C	
<b>Vapor Density</b>	5.7	(air = 1)	
<b>Specific Gravity</b>	1.21	(water = 1) @ 25 °C	
<b>Water Solubility</b>	Negligible		
<b>Solubility in Other Solvents</b>	Not determined		
<b>Partition Coefficient</b>	Not determined		
<b>Autoignition Temperature</b>	Not determined		
<b>Decomposition Temperature</b>	Not determined		
<b>Kinematic Viscosity</b>	Not determined		
<b>Dynamic Viscosity</b>	Not determined		
<b>Explosive Properties</b>	Not determined		
<b>Oxidizing Properties</b>	Not determined		
<b>Additional Information</b>	Volatile by volume 0%		

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions

### Chemical Stability

Stable under recommended storage conditions

### Possibility of Hazardous Reactions

None under normal processing

**Hazardous Polymerization**      Hazardous polymerization does not occur.

### Conditions to Avoid

Slowly hydrolyzed by water. Reacts with incompatible materials.

### Incompatible Materials

Alcohols, alkalis, water

### Hazardous Decomposition Products

Carbon monoxide, carbon dioxide

## 11. TOXICOLOGICAL INFORMATION

### Information on Likely Routes of Exposure

#### Product Information

<b>Inhalation</b>	Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Eye Contact</b>	Causes serious eye damage
<b>Ingestion</b>	May cause burns of the mouth, throat and gastrointestinal tract. Normal handling and hygiene precautions should always be taken to avoid ingestion.
<b>Skin Contact</b>	May cause mild skin irritation. May cause allergic skin reaction.

#### Component Information

Chemical Name	Oral LD50	Dermal LD50
Methyltetrahydrophthalic anhydride 34090-76-1	2140 mg/kg ( Rat )	
Tetrahydrophthalic anhydride 85-43-8	5410 mg/kg ( Rat )	
Phthalic anhydride 85-44-9	1530 mg/kg ( Rat )	> 10 g/kg ( Rabbit )
1-(2-Hydroxypropyl) imidazole 37788-55-9	70.5 g/kg ( Rat )	Primary irritation score: 2.25 ( Rabbit )

### Information on Physical, Chemical and Toxicological Effects

**Symptoms**      Please see Section 4 of this SDS for symptoms.

### Delayed and Immediate Effects as well as Chronic Effects from Short-term and Long-term Exposure

**Sensitization**      May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

**Carcinogenicity**      This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Harmful to aquatic life. Harmful to aquatic life with long-lasting effects.

Chemical Name	Algae/aquatic plants EC50	Fish LC50	Crustacea EC50
Tetrahydrophthalic anhydride 85-43-8	Desmodesmus subspicatus 65.7 mg/L 72 h	Leuciscus idus 610 mg/L 48 h (static)	Daphnia magna 117 mg/L 24 h
Phthalic anhydride 85-44-9		Leuciscus idus 313 mg/L 48 h (static)	

### Persistence and Degradability

Not determined

### Mobility

Not determined

### Bioaccumulation

Chemical Name	Partition Coefficient
Phthalic anhydride 85-44-9	0.73

### Other Adverse Effects

Not determined

## 13. DISPOSAL CONSIDERATIONS

### Waste Treatment Methods

#### **Disposal of Wastes**

Dispose of in accordance with federal, state and local regulations. Incinerate in a suitable furnace or bury with lime in an approved landfill.

#### **Contaminated Packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Chemical Name	RCRA	RCRA - Basis for Listing
Phthalic anhydride 85-44-9	U190	Included in waste streams: F039, K023, K024, K093, K094

## 14. TRANSPORT INFORMATION

### Regulatory Entity

DOT Not regulated

IATA Not regulated

IMDG Not regulated

### Note

Please see current shipping paper for most up-to-date shipping information, including exemptions and special circumstances.

## 15. REGULATORY INFORMATION

### International Inventories

**Component 37788-55-9 Listed** TSCA, DSL/NDSL, EINECS/ELINCS, IECSC, AICS  
**Other Components Listed** TSCA, DSL/NDSL, EINECS/ELINCS, ENCS, IECSC, KECI, PICCS, TCSI, AICS, NZIoC

### Legend:

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*  
*DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*  
*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*  
*ENCS - Japan Existing and New Chemical Substances*  
*IECSC - China Inventory of Existing Chemical Substances*  
*KECI - Korea Existing Chemicals Inventory*  
*PICCS - Philippines Inventory of Chemicals and Chemical Substances*  
*TCSI - Taiwan Chemical Substance Inventory*  
*AICS - Australian Inventory of Chemical Substances*  
*NZIoC - New Zealand Inventory of Chemicals*

### United States Federal Regulations

#### EPCRA

This product contains the following EPCRA Section 313 chemical subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-know Act of 1986 (40 CFR 372). **This information must be included in all SDSs that are copied and distributed for this material.**

Chemical Name	CAS No	Weight-%	EPCRA 313 Threshold Value %
Phthalic anhydride	85-44-9	1-10	1.0

#### CERCLA

Chemical Name	Hazardous Substances Reportable Quantity (RQ)
Phthalic anhydride 85-44-9	RQ 5000 lb final RQ RQ 2270 kg final RQ

### United States State Regulations

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

### United States State Right-to-Know Regulations

Chemical Name	California	Florida	Massachusetts	Minnesota	New Jersey	Pennsylvania
Phthalic anhydride 85-44-9	X	X	X	X	X	X

## 16. OTHER INFORMATION

#### NFPA

<b>Health Hazards</b> Not determined	<b>Flammability</b> Not determined	<b>Instability</b> Not determined	<b>Special Hazards</b> Not determined
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#### HMIS

<b>Health Hazards</b> 1	<b>Flammability</b> 1	<b>Physical Hazards</b> 0	<b>Personal Protection</b> Not determined
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<b>Issue Date</b>	15-November-2001
<b>Revision Date</b>	18-August-2020
<b>Revision Note</b>	Reviewed/updated
<b>GHS Version</b>	3

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**