

# LND Hardener

## Safety Data Sheet

According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

Date of issue: 10/04/2018

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Version: EH-LND-2020a

### SECTION 1: Identification

#### Identification

**Product form** : Mixture  
**Product name** : LND Hardener  
**Product code** : EH-LND, EH-LND-T  
**Chemical family** : Anhydride mixture

#### Relevant identified uses of the substance or mixture and uses advised against

**Recommended use** : Curing agent for epoxy resins

#### Details of the supplier of the safety data sheet

##### Manufacturer

Gougeon Brothers, Inc  
100 Patterson Ave.  
Bay City, MI 48706 - U.S.A.  
T 888-377-6738 or 989-684-7286

##### Distributor

#### Emergency telephone number

**Emergency number** : CHEMTREC 1 (800) 424-9300  
CHEMTREC International +1 (703) 527-3887 24 hr

### SECTION 2: Hazard identification

#### Classification of the substance or mixture

Skin Irrit. 2  
Eye Dam. 1  
Resp. Sens. 1  
Skin Sens. 1  
Aquatic Chronic 3

#### Label elements

##### Hazard pictograms (GHS)



GHS05

GHS08

##### Signal word (GHS)

Danger

##### Hazard statements (GHS)

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Harmful to aquatic life with long lasting effects.

##### Precautionary statements (GHS)

Avoid breathing dust/fume/gas/mist/vapours/spray. Wash hands, forearms and face thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection. If on skin: Wash with plenty of water. If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. 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/doctor. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a poison center/doctor. Take off contaminated clothing and wash it before reuse. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

#### Other hazards

No additional information available

#### Unknown acute toxicity

Not applicable

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### SECTION 3: Composition/information on ingredients

#### Substances

Not applicable

#### Mixtures

Name	Product identifier	%
1,3-Isobenzofurandione, tetrahydro-5-methyl-	(CAS-No.) 34090-76-1	30 - 60
1,3-Isobenzofurandione, hexahydro-5-methyl-	(CAS-No.) 19438-60-9	10 - 30
1,2,3,6-Tetrahydrophthalic anhydride	(CAS-No.) 85-43-8	10 - 30
Benzenemethanaminium, N,N,N-triethyl-, chloride	(CAS-No.) 56-37-1	1 - 10
Phthalic anhydride	(CAS-No.) 85-44-9	1 - 5

The exact chemical identity and/or exact percentage (concentration) of each ingredient may be held as confidential business information (CBI). Any ingredient not disclosed in this section may have been determined not to be hazardous to health or the environment, or it may be present at a level below its disclosure threshold.

### SECTION 4: First-aid measures

#### Description of first aid measures

- First-aid measures after inhalation** : If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
- First-aid measures after skin contact** : IF ON SKIN: Wash with plenty of Water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact** : 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/doctor.
- First-aid measures after ingestion** : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

#### Most important symptoms and effects, both acute and delayed

- Symptoms/effects after inhalation** : May cause irritation to the respiratory tract. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Symptoms/effects after skin contact** : Causes skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
- Symptoms/effects after eye contact** : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
- Symptoms/effects after ingestion** : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

#### Indication of any immediate medical attention and special treatment needed

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### SECTION 5: Fire-fighting measures

#### Extinguishing media

- Suitable extinguishing media** : Carbon dioxide. Dry chemical. Water fog.
- Unsuitable extinguishing media** : Do not use a heavy water stream.

#### Special hazards arising from the substance or mixture

- Fire hazard** : Products of combustion may include, and are not limited to: oxides of carbon.
- Reactivity** : No dangerous reactions known under normal conditions of use.

#### Advice for firefighters

- Firefighting instructions** : Do not allow run-off from fire-fighting to enter drains or water courses.
- Protection during firefighting** : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).
- Other information** : Use of water may generate toxic aqueous solutions.

### SECTION 6: Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

- General measures** : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

#### For non-emergency personnel

No additional information available

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### For emergency responders

No additional information available

### Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

### Methods and material for containment and cleaning up

- For containment** : Stop leak if safe to do so. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.
- Methods for cleaning up** : Sweep or shovel spills into appropriate container for disposal. Flush area with water and soda ash. Provide ventilation.

### Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

## SECTION 7: Handling and storage

### Precautions for safe handling

- Precautions for safe handling** : Avoid contact with skin and eyes. Avoid breathing vapour or mist. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Provide adequate ventilation. Wear personal protective equipment.
- Hygiene measures** : Wash contaminated clothing before reuse. Always wash hands after handling the product.

### Conditions for safe storage, including any incompatibilities

- Storage conditions** : Keep out of the reach of children. Keep container tightly closed. Store in dry, cool, well-ventilated area. Avoid high temperatures. Protect from moisture.
- Storage temperature** : 40 - 90 °F / 4 - 32 °C

## SECTION 8: Exposure controls/personal protection

### Control parameters

<b>1,3-Isobenzofurandione, tetrahydro-5-methyl- (34090-76-1)</b>		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.0005 mg/m <sup>3</sup>
ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	0.002 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	Surface Limit: 0.07mg/100cm <sup>2</sup> ; Upper respiratory tract irritation.
<b>1,3-Isobenzofurandione, hexahydro-5-methyl- (19438-60-9)</b>		
Not applicable		
<b>1,2,3,6-Tetrahydrophthalic anhydride (85-43-8)</b>		
Not applicable		
<b>Benzenemethanaminium, N,N,N-triethyl-, chloride (56-37-1)</b>		
Not applicable		
<b>Phthalic anhydride (85-44-9)</b>		
ACGIH	ACGIH TWA (ppm)	1 ppm SENS
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	12 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (ppm)	2 ppm
IDLH	US IDLH (mg/m <sup>3</sup> )	60 mg/m <sup>3</sup>
NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	6 mg/m <sup>3</sup>
NIOSH	NIOSH REL (TWA) (ppm)	1 ppm

### Exposure controls

- Appropriate engineering controls** : Ensure good ventilation of the work station.
- Hand protection** : Wear suitable gloves resistant to chemical penetration.
- Eye protection** : Wear eye/face protection.
- Skin and body protection** : Wear suitable protective clothing.

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<b>Respiratory protection</b>	: In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
<b>Environmental exposure controls</b>	: Avoid release to the environment.
<b>Other information</b>	: Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

### SECTION 9: Physical and chemical properties

#### Information on basic physical and chemical properties

<b>Physical state</b>	: Liquid
<b>Appearance</b>	: Liquid
<b>Colour</b>	: Amber
<b>Odour</b>	: Characteristic of anhydrides
<b>Odour threshold</b>	: No data available
<b>pH</b>	: No data available
<b>Melting point</b>	: No data available
<b>Freezing point</b>	: No data available
<b>Boiling point</b>	: > 300 °F / 149 °C
<b>Flash point</b>	: > 135 °F / 60 °C Pinsky-Martens Closed Cup
<b>Relative evaporation rate (butylacetate=1)</b>	: No data available
<b>Flammability (solid, gas)</b>	: Not flammable
<b>Vapour pressure</b>	: < 1 mm Hg @ 68 °F / 20 °C Estimated based on ingredient data.
<b>Relative vapour density at 20 °C</b>	: 5.7 (air = 1)
<b>Relative density (water = 1)</b>	: 1.21
<b>Solubility</b>	: Water: Negligible.
<b>Partition coefficient n-octanol/water</b>	: No data available
<b>Auto-ignition temperature</b>	: No data available
<b>Decomposition temperature</b>	: No data available
<b>Viscosity, kinematic</b>	: No data available
<b>Viscosity, dynamic</b>	: No data available
<b>Explosive limits</b>	: No data available
<b>Explosive properties</b>	: No data available
<b>Oxidising properties</b>	: No data available

#### Other information

<b>VOC content</b>	: ASTM D 2369-07 was used to determine the Volatile Content of mixed epoxy resin and hardener. ECCW / LND: 9.89 g/L ; 0.08 lb/gal
<b>Bulk density</b>	: 10.08 lb/gal (1.21 kg/L)

### SECTION 10: Stability and reactivity

<b>Reactivity</b>	: No dangerous reactions known under normal conditions of use.
<b>Chemical stability</b>	: Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	: No dangerous reactions known under normal conditions of use.
<b>Conditions to avoid</b>	: Heat. Incompatible materials. Moisture.
<b>Incompatible materials</b>	: Alcohols. Alkalis. Amines. Water.
<b>Hazardous decomposition products</b>	: May include, and are not limited to: oxides of carbon. Irritating fumes.

### SECTION 11: Toxicological information

#### Information on toxicological effects

1,3-Isobenzofurandione, tetrahydro-5-methyl- (34090-76-1)	
LD50 oral rat	2140 mg/kg
LD50 dermal rabbit	2980 mg/kg
LC50 inhalation rat	> 0.74 mg/L 8h mist

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<b>1,3-Isobenzofurandione, hexahydro-5-methyl- (19438-60-9)</b>	
LD50 dermal rabbit	1555 mg/kg
LC50 inhalation rat	> 0.74 mg/L 8h mist

<b>1,2,3,6-Tetrahydrophthalic anhydride (85-43-8)</b>	
LD50 oral rat	5410 mg/kg
LD50 dermal rabbit	> 22000 mg/kg

<b>Benzenemethanaminium, N,N,N-triethyl-, chloride (56-37-1)</b>	
LD50 oral rat	2219 mg/kg
LD50 dermal rabbit	8300 mg/kg

<b>Phthalic anhydride (85-44-9)</b>	
LD50 oral rat	1530 mg/kg
LD50 dermal rabbit	> 10000 mg/kg

<b>Acute toxicity (oral)</b>	: Not classified.
<b>Acute toxicity (dermal)</b>	: Not classified.
<b>Acute toxicity (inhalation)</b>	: Not classified.
<b>Skin corrosion/irritation</b>	: Causes skin irritation.
<b>Serious eye damage/irritation</b>	: Causes serious eye damage.
<b>Respiratory or skin sensitization</b>	: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	: Not classified.
<b>Carcinogenicity</b>	: Not classified.
<b>Reproductive toxicity</b>	: Not classified.
<b>STOT-single exposure</b>	: Not classified.
<b>STOT-repeated exposure</b>	: Not classified.
<b>Aspiration hazard</b>	: Not classified.
<b>Symptoms/effects after inhalation</b>	: May cause irritation to the respiratory tract. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Symptoms/effects after skin contact</b>	: Causes skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
<b>Symptoms/effects after eye contact</b>	: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
<b>Symptoms/effects after ingestion</b>	: May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Other information</b>	: Likely routes of exposure: ingestion, inhalation, skin and eye.

## SECTION 12: Ecological information

### Toxicity

**Ecology - general** : Harmful to aquatic life with long lasting effects.

<b>Benzenemethanaminium, N,N,N-triethyl-, chloride (56-37-1)</b>	
LC50 fish 1	141 - 185 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

### Persistence and degradability

<b>LND Hardener</b>	
Persistence and degradability	Not established.

### Bioaccumulative potential

<b>LND Hardener</b>	
Bioaccumulative potential	Not established.

<b>Phthalic anhydride (85-44-9)</b>	
BCF fish 1	3169
Partition coefficient n-octanol/water	0.73

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### Mobility in soil

No additional information available.

### Other adverse effects

**Other information** : No other effects known.

Name	Product identifier	Ecotoxicity Classification Information
1,3-Isobenzofurandione, tetrahydro-5-methyl-	(CAS-No.) 34090-76-1	Not classified
1,3-Isobenzofurandione, hexahydro-5-methyl-	(CAS-No.) 19438-60-9	Not classified
1,2,3,6-Tetrahydrophthalic anhydride	(CAS-No.) 85-43-8	Aquatic Chronic Cat. 3
Benzenemethanaminium, N,N,N-triethyl-, chloride	(CAS-No.) 56-37-1	Aquatic Chronic Cat. 3
Phthalic anhydride	(CAS-No.) 85-44-9	Not classified

## SECTION 13: Disposal considerations

### Waste treatment methods

**Product/Packaging disposal recommendations** : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

## SECTION 14: Transport information

### Department of Transportation (DOT) and Transportation of Dangerous Goods (TDG)

In accordance with DOT/TDG

Not regulated

### Transport by sea

In accordance with IMDG

Not regulated

Marine pollutant : No

### Transport by air

In accordance with IATA

Not regulated

## SECTION 15: Regulatory information

### Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

Phthalic anhydride (85-44-9)	
Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb
SARA Section 313 - Emission Reporting	1 %

### International regulations

No additional information available.

### US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

1,2,3,6-Tetrahydrophthalic anhydride (85-43-8)
U.S. - New Jersey - Right to Know Hazardous Substance List

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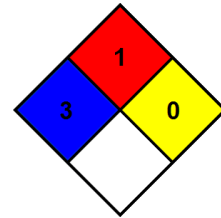
### Phthalic anhydride (85-44-9)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16: Other information

**Date of issue** : 10/04/2018  
**Revision date** : 03/17/2020  
**Version** : EH-LND-2020a  
**Other information** : None.

**NFPA health hazard** : 3  
**NFPA fire hazard** : 1  
**NFPA reactivity** : 0



Hazard Rating  
**Health** : 3 Serious Hazard  
**Flammability** : 1 Slight Hazard  
**Physical** : 0 Minimal Hazard

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