

# Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 03.02.2018

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## LND Hardener

### SECTION 1: Identification

#### Product identifier

**Product name:** LND Hardener

**Product code:** LND-1

#### Recommended use of the product and restriction on use

**Relevant identified uses:** Not determined or not applicable.

**Uses advised against:** Not determined or not applicable.

**Reasons why uses advised against:** Not determined or not applicable.

#### Manufacturer or supplier details

##### Manufacturer:

##### North America

Gougeon Brothers, Inc.

100 Patterson Ave.

Bay City, MI 48706, U.S.A.

310-882-2120

safety@entropyresin.com

#### Emergency telephone number:

##### North America

##### CHEMTREC

800-424-9300 US

703-527-3887 International

### SECTION 2: Hazard(s) identification

#### GHS classification:

Skin irritation, category 2

Serious eye damage, category 1

Respiratory sensitization, category 1

Skin sensitization, category 1

#### Label elements

##### Hazard pictograms:



**Signal word:** Danger

#### Hazard statements:

H315 Causes skin irritation.

H318 Causes serious eye damage.

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

H317 May cause an allergic skin reaction.

#### Precautionary statements:

P264 Wash eyes and skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

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P284 Wear respiratory protection.  
P285 In case of inadequate ventilation wear respiratory protection.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P321 Specific treatment (see supplemental first aid instructions on this label).  
P362 Take off contaminated clothing and wash before reuse  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.  
P363 Wash contaminated clothing before reuse  
P333+P313 If skin irritation or a rash occurs: Get medical advice/attention  
P501 Dispose of contents and container as instructed in Section 13.

**Hazards not otherwise classified:** None

## SECTION 3: Composition/information on ingredients

Identification	Name	Weight %
CAS number: 56-37-1	Benzyltriethylammonium chloride	<10
CAS number: 19438-60-9	Methylhexahydrophthalic anhydride	10-25
CAS number: 85-44-9	Phthalic anhydride	<5
CAS number: 34090-76-1	Methyltetrahydrophthalic anhydride	35-80
CAS number: 85-43-8	Tetrahydrophthalic anhydride	10-25

**Additional Information:** None

## SECTION 4: First aid measures

### Description of first aid measures

#### General notes:

Not determined or not applicable.

#### After inhalation:

Move exposed individual to fresh air  
Loosen clothing as necessary and position individual in a comfortable position  
Maintain an unobstructed airway  
Immediately call a POISON CONTROL CENTER or seek medical attention

#### After skin contact:

Rinse affected area with soap and water  
If symptoms develop or persist, seek medical attention  
Wash affected area with soap and water

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Seek medical attention if symptoms develop or persist

### After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes

Remove contact lens(es) if able to do so during rinsing

Immediately call a POISON CONTROL CENTER or seek medical attention

### After swallowing:

Rinse mouth and then drink plenty of water

Do not induce vomiting

Get medical advice/attention if you feel unwell

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

#### Acute symptoms and effects:

Not determined or not applicable.

#### Delayed symptoms and effects:

Not determined or not applicable.

### Immediate medical attention and special treatment

#### Specific treatment:

Not determined or not applicable.

#### Notes for the doctor:

Not determined or not applicable.

## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition

#### Unsuitable extinguishing media:

Do not use water as an extinguisher

### Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors

### Special protective equipment for firefighters:

Wear protective eye wear, gloves and clothing

Refer to Section 8

Use typical firefighting equipment, self-contained breathing apparatus, special tightly sealed suit

### Special precautions:

Heating causes a rise in pressure, risk of bursting and combustion

Shut off sources of ignition

Carbon monoxide and carbon dioxide may form upon combustion

## SECTION 6: Accidental release measures

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

Ensure adequate ventilation

Ensure air handling systems are operational

Wear protective eye wear, gloves and clothing

### Environmental precautions:

Should not be released into the environment

Prevent from reaching drains, sewer or waterway

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### Methods and material for containment and cleaning up:

Absorb with non-combustible liquid-binding material (sand, diatomaceous earth (clay), acid binders, universal binders)

Dispose of contents / container in accordance with local regulations

### Reference to other sections:

Not determined or not applicable.

## SECTION 7: Handling and storage

### Precautions for safe handling:

Do not eat, drink, smoke or use personal products when handling chemical substances.

Avoid breathing mist or vapor.

Use only with adequate ventilation.

### Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area.

Store away from foodstuffs.

## SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

### Occupational Exposure limit values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
United States (OSHA)	Phthalic anhydride	85-44-9	OSHA PEL TWA 2 ppm
	Phthalic anhydride	85-44-9	OSHA PEL TWA 12 mg/m <sup>3</sup>
ACGIH	Methyltetrahydrophthalic anhydride	34090-76-1	8-Hour Exposure Limit (TLV-TWA): 0.0005 mg/m <sup>3</sup>
	Methyltetrahydrophthalic anhydride	34090-76-1	15-minute STEL: 0.002 mg/m <sup>3</sup>
	Methyltetrahydrophthalic anhydride	34090-76-1	8-Hour Surface Limit (TLV-SL): 0.7 mg/100 cm <sup>2</sup>
	Phthalic anhydride	85-44-9	ACGIH TLV TWA 1 ppm; Sensitizer
NIOSH	Phthalic anhydride	85-44-9	NIOSH REL TWA 1 ppm
	Phthalic anhydride	85-44-9	NIOSH REL TWA 6 mg/m <sup>3</sup>

### Biological limit values:

No biological exposure limits noted for the ingredient(s).

### Information on monitoring procedures:

Not determined or not applicable.

### Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

### Personal protection equipment

#### Eye and face protection:

Safety goggles or glasses, or appropriate eye protection.

#### Skin and body protection:

Select glove material impermeable and resistant to the substance.

Select glove material based on rates of diffusion and degradation.

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### Respiratory protection:

When necessary, use NIOSH-approved breathing equipment.

### General hygienic measures:

Wash hands before breaks and at the end of work.

Avoid contact with skin, eyes and clothing.

Perform routine housekeeping.

Wash contaminated clothing before reusing.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Appearance	Amber Liquid
Odor	Characterisitic
Odor threshold	Not determined or not available.
pH	Not determined or not available.
Melting point/freezing point	Not determined or not available.
Initial boiling point/range	>307 °C (>585 °F)
Flash point (closed cup)	>135 °C (>275 °F)
Evaporation rate	Zero
Flammability (solid, gas)	Not determined or not available.
Upper flammability/explosive limit	Not determined or not available.
Lower flammability/explosive limit	Not determined or not available.
Vapor pressure	0 mmHg at 15 °C
Vapor density	5.7 (air = 1)
Density	Not determined or not available.
Relative density	1.21 (water = 1) at 25 °C
Solubilities	Negligible.
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	Not determined or not available.
Decomposition temperature	Not determined or not available.
Dynamic viscosity	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Explosive properties	Not determined or not available.
Oxidizing properties	Not determined or not available.

### Other information

## SECTION 10: Stability and reactivity

### Reactivity:

Does not react under normal conditions of use and storage.

### Chemical stability:

Stable under normal conditions of use and storage.

### Possibility of hazardous reactions:

None under normal conditions of use and storage.

### Conditions to avoid:

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None known.

### Incompatible materials:

Alcohols, alkalis, water.

### Hazardous decomposition products:

Carbon monoxide, carbon dioxide.

## SECTION 11: Toxicological information

### Acute toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

#### Substance data:

Name	Route	Result
Phthalic anhydride	oral	LD50 - Mouse - 1,500 mg/kg

### Skin corrosion/irritation

**Assessment:** Causes skin irritation

**Product data:** No data available.

#### Substance data:

Name	Result
Phthalic anhydride	Causes skin irritation.

### Serious eye damage/irritation

**Assessment:** Causes serious eye damage

**Product data:** No data available.

#### Substance data:

Name	Result
Methyltetrahydrophthalic anhydride	Causes serious eye damage.
Tetrahydrophthalic anhydride	Causes serious eye damage.
Methylhexahydrophthalic anhydride	Causes serious eye damage.
Phthalic anhydride	Causes serious eye damage.

### Respiratory or skin sensitization

**Assessment:** May cause allergy or asthma symptoms or breathing difficulties if inhaled May cause an allergic skin reaction

**Product data:** No data available.

#### Substance data:

Name	Result
Methyltetrahydrophthalic anhydride	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
	May cause an allergic skin reaction.
Tetrahydrophthalic anhydride	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
	May cause an allergic skin reaction.
Methylhexahydrophthalic anhydride	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
	May cause an allergic skin reaction.

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Name	Result
Phthalic anhydride	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
	May cause an allergic skin reaction.

### Carcinogenicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

**International Agency for Research on Cancer (IARC):** None of the ingredients are listed.

**National Toxicology Program (NTP):** None of the ingredients are listed.

### Germ cell mutagenicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Reproductive toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Specific target organ toxicity (single exposure)

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:**

Name	Result
Phthalic anhydride	Specific Target Organ Toxicity, Single Exposure - May cause respiratory irritation.

### Specific target organ toxicity (repeated exposure)

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Aspiration toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

**Information on likely routes of exposure:** No data available.

**Symptoms related to the physical, chemical and toxicological characteristics:** No data available.

**Other information:** No data available.

## SECTION 12: Ecological information

### Acute (short-term) toxicity

**Assessment:** Based on available data, the classification criteria are not met.

**Product data:** No data available.

**Substance data:** No data available.

### Chronic (long-term) toxicity

**Product data:** No data available.

**Substance data:**

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Name	Result
Tetrahydrophthalic anhydride	EC50 - Pseudokirchneriella subcapitata - 65.3 mg/L - 72 h

### Persistence and degradability

**Product data:** No data available.

**Substance data:** No data available.

### Bioaccumulative potential

**Product data:** No data available.

**Substance data:** No data available.

### Mobility in soil

**Product data:** No data available.

**Substance data:** No data available.

**Other adverse effects:** No data available.

## SECTION 13: Disposal considerations

### Disposal methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11)

## SECTION 14: Transport information

### United States Transportation of dangerous goods (49 CFR DOT)

UN number	Not regulated
UN proper shipping name	Not regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None

### International Maritime Dangerous Goods (IMDG)

UN number	Not regulated
UN proper shipping name	Not regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None

### International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number	Not regulated
UN proper shipping name	Not regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None



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### SECTION 15: Regulatory information

#### United States regulations

##### Inventory listing (TSCA):

34090-76-1	Methyltetrahydrophthalic anhydride	Listed
85-43-8	Tetrahydrophthalic anhydride	Listed
19438-60-9	Methylhexahydrophthalic anhydride	Listed
85-44-9	Phthalic anhydride	Listed
56-37-1	Benzyltriethylammonium chloride	Listed

**Significant New Use Rule (TSCA Section 5):** Not determined.

**Export notification under TSCA Section 12(b):** Not determined.

**SARA Section 302 extremely hazardous substances:** Not determined.

##### SARA Section 313 toxic chemicals:

34090-76-1	Methyltetrahydrophthalic anhydride	Not Listed
85-43-8	Tetrahydrophthalic anhydride	Not Listed
85-44-9	Phthalic anhydride	Listed
19438-60-9	Methylhexahydrophthalic anhydride	Not Listed
56-37-1	Benzyltriethylammonium chloride	Not Listed

##### CERCLA:

85-44-9	Phthalic anhydride	Listed	5,000
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##### RCRA:

85-44-9	Phthalic anhydride	Listed	U190
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**Section 112(r) of the Clean Air Act (CAA):** Not determined.

##### Massachusetts Right to Know:

34090-76-1	Methyltetrahydrophthalic anhydride	Not Listed
85-43-8	Tetrahydrophthalic anhydride	Not Listed
19438-60-9	Methylhexahydrophthalic anhydride	Not Listed
85-44-9	Phthalic anhydride	Listed
56-37-1	Benzyltriethylammonium chloride	Not Listed

##### New Jersey Right to Know:

34090-76-1	Methyltetrahydrophthalic anhydride	Not Listed
85-43-8	Tetrahydrophthalic anhydride	Listed
19438-60-9	Methylhexahydrophthalic anhydride	Not Listed
85-44-9	Phthalic anhydride	Listed
56-37-1	Benzyltriethylammonium chloride	Not Listed

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### New York Right to Know:

34090-76-1	Methyltetrahydrophthalic anhydride	Not Listed
85-43-8	Tetrahydrophthalic anhydride	Listed
19438-60-9	Methylhexahydrophthalic anhydride	Not Listed
85-44-9	Phthalic anhydride	Listed
56-37-1	Benzyltriethylammonium chloride	Not Listed

### Pennsylvania Right to Know:

34090-76-1	Methyltetrahydrophthalic anhydride	Not Listed
85-43-8	Tetrahydrophthalic anhydride	Not Listed
19438-60-9	Methylhexahydrophthalic anhydride	Not Listed
85-44-9	Phthalic anhydride	Listed
56-37-1	Benzyltriethylammonium chloride	Not Listed

**California Proposition 65:** None of the ingredients are listed.

## SECTION 16: Other information

**Abbreviations and Acronyms:** None

### Disclaimer:

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

**NFPA:** 1-0-0

**HMIS:** 1-0-0

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**End of Safety Data Sheet**