SAFETY DATA SHEET

Issue Date 03-September-1993 **Revision Date** 04-March-2021 **Version** 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name MALDENE 285

Other Means of Identification
SDS # LC-052

Recommended Use of the Chemical and Restrictions on Use
Recommended Use Chemical intermediate, epoxy coatings curing agent

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 on skin and eye irritation relates to repeated and prolonged exposure, particularly to the vapor form of the substance. The supplier has indicated that eye exposure normally results in eye irritation.

Classification

Specific Target Organ Toxicity (Single Exposure)	Category 3
Flammable Liquids	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1

Signal Word
Danger

Hazard Statements
H336: May cause drowsiness or dizziness
H225: Highly flammable liquid and vapor
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 Straw to dark amber liquid **Physical State** Liquid **Odor** Acetone

Precautionary Statements - Prevention
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P240: Ground and bond container and receiving equipment.
P241: Use explosion-proof equipment.
P242: Use non-sparking tools.
P243: Take action to prevent static discharge.
P261: Avoid breathing fumes or vapors.
P271: Use only outdoors or in a well-ventilated area.
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.

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P333 + P313: If skin irritation (or rash) occurs: Get medical advice/attention.
P363: Wash contaminated clothing 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.

P370 + P378: In case of fire: Use water spray, dry chemical, CO_2 or alcohol-resistant aqueous film-forming foam to extinguish.

Precautionary Statements - Storage
P403 + P233 + P235: Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405: Store locked up.

Precautionary Statements - Disposal
P501: Dispose of contents/container in accordance with local, regional and national regulations.

Other Hazards
Harmful to aquatic life with long lasting effects
Harmful to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Copolymer of Maleic anhydride and 1,3-Butadiene	25655-35-0	19–26
Tetrahydrophthalic anhydride	85-43-8	0–5
Acetone	67-64-1	74–76

** 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

General If exposed to this product in any way outside of normal handling and if there is concern about this exposure, get medical advice or attention.

Inhalation Move person to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm and quiet. Get medical attention immediately.

Eye Contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation occurs.

Ingestion If swallowed, do not induce vomiting because of danger of aspirating liquid into lungs. If spontaneous vomiting occurs, keep head below hips to prevent aspiration. Monitor breathing. If person is drowsy or unconscious, place on left side with head down. Never give anything by mouth to an unconscious person. If possible, do not leave the person unattended. Call immediately a physician or your local Poison Control Center.

Skin Contact Thoroughly wash exposed area with plenty of soap and water while removing all contaminated clothing, including shoes. Launder contaminated clothing before reuse. Get medical attention if skin is damaged or if skin irritation develops or persists.

Most Important Symptoms and Effects, both Acute and Delayed

Symptoms May cause dermatitis or skin irritation in some individuals upon prolonged contact. Eyes may have symptoms of redness, itching, irritation and watering from overexposure. May cause irritation to the mucous membranes and upper respiratory tract. Prolonged breathing of vapors may cause dizziness, breathing difficulties, or other issues.

Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physicians Treat symptomatically. Treatment of overexposure should be directed toward the control of symptoms and be based on the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Media Dry chemical, carbon dioxide (CO_2), alcohol-resistant aqueous film-forming foam, water spray (fog)

Unsuitable Media Steady stream or jet of water

Specific Hazards Arising from the Chemical

Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations distant from the material handling point. Vapors may form explosive mixtures in air. Static discharges may occur in this material. Mixtures of water and acetone containing 2% acetone or more, by weight, will flash at 38°C (100°F). Vapors may ignite at temperatures above the flash point. Keep material away from heat, sparks, open flames, hot surfaces and other ignition sources.

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. Cool surrounding fire-exposed equipment, containers, tanks and structures with water spray or stream. Take precautionary measures against static discharges.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Use personal protective equipment as required (see Section 8). Persons not wearing protective equipment should be excluded from the area of the spill until clean-up has been completed. Eliminate or remove all sources of ignition. Ensure adequate ventilation. Avoid breathing fumes or vapors. Beware of vapor accumulation in low areas.

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 Ensure adequate ventilation. Stop spill at source, if safe to do. Vapor suppressing foams may be used to limit vapors. Dike area of spill to prevent spreading or entry into sewers, basements or confined areas. Using electrically protected equipment, pump liquid to salvage tanks or containers.

Methods for Cleaning Up Spillage may be taken up with non-combustible, absorbent material. Using electrically protected equipment, collect resulting material in suitable containers for disposal. Clean up and dispose of material in accordance with federal, state and local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling Do not handle until all safety precautions have been read and understood. Use personal protection recommended in Section 8. Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing fumes or vapors. Use only with adequate ventilation. Keep containers tightly closed. Keep containers upright to prevent leakage. Avoid all possible sources of ignition. Take precautionary measures against static discharges. Ground and bond containers when transferring material. Use non-sparking tools and explosion-proof equipment.

Other Precautions

Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperatures and pressures, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published autoignition temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions Keep containers tightly closed when not in use and store in a dry, cool and well-ventilated area. Avoid excessive temperatures.

Packaging Materials Do not transfer to unmarked containers. Empty containers may retain product residue (liquid or vapor). Do not pressurize, cut or weld empty containers, and do not expose them to heat or ignition sources.

Incompatible Materials Strong oxidizing agents, strong acids, strong bases, reducing agents, phosphorous oxychloride

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL
Acetone 67-64-1	TWA: 500 ppm STEL: 750 ppm	TWA: 1000 ppm TWA: 2400 mg/m^3 STEL: 1000 ppm STEL: 2400 mg/m^3	TWA: 250 ppm TWA: 590 mg/m^3 IDLH: 2500 ppm

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. Eye-wash facilities should be readily available.

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

Respiratory Protection Ensure adequate ventilation, especially in confined areas. If applicable, use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below recommended exposure limits. Wear appropriate breathing apparatus if air renewal is not sufficient to maintain vapor concentrations below threshold limit values. If air-purifying respirators are appropriate, use a full-face supplied-air respirator with multipurpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	Liquid		
Appearance	Straw to dark amber liquid	**Odor**	Acetone
Color	Straw to dark amber	**Odor Threshold**	Not determined

Property	Values	Remarks/Method
pH	Not determined	
Melting Point/Freezing Point	–94 °C (–137 °F)	
Boiling Point/Boiling Range	56 °C (133 °F)	@ 760 mm Hg
Flash Point	–17 °C (1.4 °F)	(Tag closed cup)
Evaporation Rate	14.4	(butyl acetate = 1) @ 25 °C (77 °F)
Flammability (Solid, Gas)	n/a-liquid	
Upper Flammability Limit	13%	
Lower Flammability Limit	2%	
Vapor Pressure	184 mm Hg	@ 20 °C (68 °F)
Relative Vapor Density	2.0	(air = 1)
Specific Gravity	Not determined	
Water Solubility	Partial	(Copolymer coagulates; solvent miscible)
Solubility in Other Solvents	Not determined	
Partition Coefficient	Not determined	
Autoignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	8–15 cP	@ 25 °C (77 °F)
Explosive Properties	Vapor in air can be explosive	
Oxidizing Properties	Not determined	
Percent Volatile by Weight	74%–76%	

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
Avoid heat, sparks, open flames and other ignition sources. Avoid temperature extremes and direct sunlight.

Incompatible Materials
Strong oxidizing agents, strong acids, strong bases, reducing agents, phosphorous oxychloride

Hazardous Decomposition Products
Hazardous decomposition will occur only under fire conditions, releasing carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation Breathing small amounts during normal handling is not likely to cause harmful effects. Breathing large amounts may cause irritation of the nose, throat and respiratory tract, depression of the central nervous system, nausea, headache, dizziness, drowsiness or unconsciousness. Pre-existing lung disorders, such as asthma, may be aggravated by this material, causing shortness of breath, respiratory depression or coma.

Eye Contact Exposure may cause serious eye irritation, including stinging, redness and tearing.

Ingestion Ingestion in sufficient amounts may cause gastrointestinal irritation, resulting in nausea, vomiting and diarrhea, or depression of the central nervous system, resulting in nausea, headache, dizziness, drowsiness or unconsciousness.

Skin Contact Exposure causes skin irritation or drying. Prolonged exposure may cause dermatitis, resulting in burning, redness, cracking or other skin damage. Pre-existing skin disorders may be aggravated by exposure to this material.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Tetrahydrophthalic anhydride 85-43-8	5410 mg/kg (Rat)		
Acetone 67-64-1	5800 mg/kg (Rat)	> 7400 mg/kg (Rabbit)	132 mg/L (Rat) 3 h vapor

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

Mutagenicity Not determined

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

STOT – Single Exposure This product may cause drowsiness or dizziness.

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

Chemical Name	Algae/aquatic plants EC50	Fish EC50	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

Chemical Name	Invertebrates LC50	Fish EC50	Crustacea EC50
Acetone 67-64-1	Artemia salina 2100 mg/L 24h Daphnia pulex 8800 mg/L 48 h	Pimephales promelas 7500 mg/L 96 h (flow-through) Oncorhynchus mykiss 5540 mg/L 96 h (static)	Daphnia magna 13500 mg/L 48 h

Persistence and Degradability

The copolymer is expected to not readily biodegrade.

Bioaccumulation

The copolymer is expected to bioaccumulate. The solvent will disperse in water and evaporate.

Mobility

Not determined

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable federal, state and local laws and regulations. Extra care must be taken in the incineration of this material because it is highly flammable. It is advised that a licensed professional waste disposal service be used to dispose of this material.

Contaminated Packaging Disposal should be in accordance with applicable federal, state and local laws and regulations.

State of California This product contains a substance that is listed with the state of California as a hazardous waste.

Chemical Name	CAS No	California Hazardous Waste Status
Acetone	67-64-1	Ignitable

14. TRANSPORT INFORMATION

Proper Shipping Name by Regulatory Entity

DOT Acetone solution

IMDG Acetone solution

IATA Acetone solution

Regulatory Information	UN Number	Class	Packing Group	Label
DOT Classification	UN-1090	3	II	
IMDG Classification	UN-1090	3	II	
IATA Classification	UN-1090	3	II	

Note

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

15. REGULATORY INFORMATION

International Inventories

Component 25655-35-0 Listed	TSCA, DSL/NDSL, ENCS, IECSC, KECI, PICCS, TCSI, AICS, NZIoC
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

CERCLA

Chemical Name	CAS No	Hazardous Substances Reportable Quantity (RQ)
Acetone	67-64-1	RQ 5000 lb final RQ / RQ 2268 kg final RQ

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

EPCRA This product does not contain any chemicals with known CAS numbers subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-know Act of 1986 (40 CFR 372).

SARA 311/312 Fire hazard, acute health hazard, chronic health hazard

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
Acetone 67-64-1	X	X	X	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	1	3	0	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	1	3	0	Not determined

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GHS Version	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