

Product name:

Vercet™ Lactide

Product code:

M700

Revision Number: 1**Revision date:** 06/08/2017**Print date:** 06/16/2017**SAFETY DATA SHEET**

In accordance with 29 CFR 1910.1200:2012, ANSI Z400.1-2010, and ISO 11014-1: 2009.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: Vercet™ Lactide**Product code:** M700**Product Use:** A substance which can be used as a reactive chemical intermediate or in the synthesis of polymers and copolymers.**Supplier:**

NatureWorks LLC

15305 Minnetonka Blvd

Minnetonka, MN 55345 USA

Customer Information Center: 800-664-6436

Emergency telephone numbers (24 hours a day): (Medical Information) (651) 632-9273
(Transportation Information) CHEMTREC: 800-424-9300 (in the United States)
(Transportation Information) CHEMTREC: (703) 527-3887 (outside the United States)

2. HAZARDS IDENTIFICATION

Classification: Serious Eye Damage/Eye Irritation (Category 1)**Signal word:** Danger**Hazard Statements:** H318 Causes serious eye damage**Precautionary Statements** P280 Wear protective gloves/eye protection/face protection

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IF IN EYES: Rinse caustiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Potential health effects: See Section 11 for more information

Environmental precautions: See Section 12 for more information

Other Hazards: Lactide, when in contact with moisture, hydrolyzes to form lactic acid. Lactic acid can cause severe irritation and possibly burns to tissue upon contact. Contact with eyes may cause severe irritation with corneal injury, which may result in permanent impairment of vision, even blindness.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name and CAS	Weight %	OSHA Exposure Limits:	ACGIH Exposure Limits:
Lactide 95-96-5	>90	None	None

All ingredients in quantities > 1.0% (0.1% for carcinogens) that are potentially hazardous per OSHA definitions.

4. FIRST AID MEASURES

Emergency telephone numbers (24 hours a day):

- (Medical Information) (651) 632-9273
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Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove any contact lenses if easy to do. Call a physician or Poison Control Center immediately.

Skin contact: Rinse immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.

Inhalation: Move to fresh air. Consult a physician if symptoms persist.

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Ingestion: If swallowed, DO NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth with plenty of water. If victim is fully conscious, give a small glass of water. NEVER give anything by mouth to an unconscious person.

Notes to physician: No specific antidote. Supportive care. Treatment based on judgement of the physician in response to the reaction of the patient.

5. FIRE-FIGHTING MEASURES

Flammability:

Autoignition temperature: Not determined

Flammability Limits in Air:

Flammable limits in air - lower (%): Not determined

Flammable limits in air - upper (%): Not determined

Suitable extinguishing media: Carbon dioxide (CO₂), Dry chemical, Foam, Water fog, Fine spray, Alcohol resistant foams are preferred if available. General-purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate area and fight fire from a safe distance. Avoid eye and skin contact with this material. If contact is likely, change to full chemical resistant clothing with SCBA.

Under fire conditions: Water mist may be used to cool closed containers

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Isolate the spill area. Remove personnel from immediate area until material has cooled, either naturally or after soaking with an inert absorbent (e.g. vermiculite). Use with proper personal protective equipment (see Section 8). Avoid contact with skin and eyes. Ensure adequate ventilation. Avoid breathing vapors or mists. Avoid contact with eyes. Sweep up to prevent slipping hazard.

Environmental precautions: Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system

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Methods for cleaning up: Protect from water. Where possible, allow molten material to solidify naturally. Soak up with inert absorbent material, if needed or preferred. Allow material to solidify, and scrape up. Sweep up and shovel into suitable containers for disposal. Avoid dust generation. If material has been exposed to water and hydrolysis has occurred neutralize material with a basic absorbent. See Section 13 for more information.

7. HANDLING AND STORAGE

Safe handling advice: Avoid contact with skin, eyes and clothing. Workers should be protected from the possibility of contact with molten material during fabrication. Avoid dust formation.

Storage: Recommended pumping and storage temperature is 212F (100C). Product may become a solid at temperatures below (80C). Keep containers tightly closed in a dry, cool and well-ventilated place. Keep contents under a nitrogen atmosphere.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Control:

Engineering measures: Ensure adequate ventilation. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.

Exposure limits: This material can generate Particulates Not Otherwise Classifiable (PNOC). The Occupational Safety and Health Administration (OSHA) PEL/TWA for PNOC is 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction. The American Conference of Governmental Industrial Hygienists (ACGIH) TLV/TWA for PNOC is 10 mg/m³ for inhalable particulates and 3 mg/m³ for respirable particulates.

Personal protective equipment:

Eye protection: Goggles Face-shield. Safety glasses with side-shields.

Skin and body protection: Impervious clothing Selection of specific items such as faceshield, gloves, boots, apron or full-body suit will depend on operation.

Respiratory protection: Use with approved air purifying respirator if handling at

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elevated temperatures. Consult an industrial hygiene professional prior to respirator selection and use. Use a positive-pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Hand protection: Preventive skin protection. Contact glove manufacturer for specific glove information.

Hygiene measures: Eye wash fountain should be located in immediate work area. Handle in accordance with good industrial hygiene and safety practice. Keep working clothes separately.

Special hazard: Workers should be protected from the possibility of contact with molten material during fabrication.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid, Liquid
Color: Yellow, Amber
Odor: Acrid odor.
pH: No information available
Vapor pressure: Not determined
Vapor density: Not determined
Evaporation rate: Not determined
Partition Coefficient (n-octanol/water) Not determined
Density: No data available
Decomposition temperature: Not determined
Boiling point / boiling range: 482-500F (250-260C)
Melting point / melting range: 131F (55C)
Autoignition temperature: Not determined
Freezing point °C Not determined
Flash point: 150C
Flammability: No information available
Flammability Limits in Air: No information available
Water solubility: Not determined
Solubility: No information available
Other Standards: None

10. STABILITY AND REACTIVITY

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Chemical stability: Hygroscopic. Stable under recommended storage conditions.

Conditions to avoid: Temperatures above 440F (230C). Exposure to moisture. Heat Generation of gas during decomposition can cause pressure in closed systems.

Materials to avoid: Strong bases, Oxidizing agents, Nitric acid, Hydrofluoric acid

Hazardous decomposition products: Carbon dioxide, Carbon monoxide (CO), Aldehydes, Organic acids

Possibility of hazardous reactions: None expected under conditions of normal use

Polymerization: Polymerization can occur. At elevated temperatures organometallic compounds, nitric acid and hydrofluoric acid can catalyze polymerization.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: Lactide caused adverse effects to the gastrointestinal system and kidneys in animal studies.

Local effects: Lactide, when in contact with moisture, hydrolyzes to form lactic acid. Lactic acid can cause severe irritation and possibly burns to tissue upon contact. Risk of serious damage to eyes Severe eye irritation May cause skin irritation Irritating to respiratory system

Specific effects: Inhalation may provoke the following symptoms:, Lung irritation, Severe shortness of breath, Difficulty in breathing, Ingestion may provoke the following symptoms:, Nausea, Diarrhoea, Vomiting.

Long term toxicity No data available

Mutagenic effects: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Did not show mutagenic effects in animal experiments

Reproductive toxicity: No data is available on the product itself.

Carcinogenic effects: No data is available on the product itself.

Target organ effects: In animals, effects have been reported on the following organs following ingestion: stomach, kidneys.

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Skin: LD50/dermal/rabbit > 2000 mg/kg**Ingestion:** LD50/ oral/ rat > 5000 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity effects: No data available**Persistence and degradability:** No data available**Bioaccumulation:** The bioconcentration factor (BCF) is less than 100 (low potential for bioconcentration).**Mobility:** Estimated log octanol-water partition coefficient (Kow) is 1.65. Estimated Koc is 50 (very mobile in soils). Estimated Henrys Law Constant is 1.22×10^{-5} atm-m³/mole (more likely to partition into water than air).

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

THE COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT):**Proper shipping name:** This product is not regulated when shipped at room temperature.**Hazard class:** Not regulated**UN-No:** None**Packing group:** None**Hazardous substances (RQ):** None

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IMDG:

Proper shipping name: This product is not regulated when shipped at room temperature.

Hazard class: Not regulated

Packing group: None

ICAO/IATA:

Proper shipping name: This product is not regulated when shipped at room temperature.

Hazard Class: Not regulated

Packing group: None

15. REGULATORY INFORMATION

(not meant to be all inclusive - selective regulations represented)

Regulatory requirements are subject to change and may differ between locations. It is the User's responsibility to ensure that all activities comply with all federal, state or provincial and local laws and regulations. The following specific information is made for the purpose of complying with numerous national, federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATIONS

TSCA Inventory List: Listed

STATE REGULATIONS

California Proposition 65 - Not Listed

INTERNATIONAL INVENTORIES

Canada NDSL Inventory List : Listed

REACH/EU EINECS List : Listed

Japanese inventory (ENCS):Listed

Korean chemical inventory: Listed

China inventory of existing chemical substances list : Not Listed

16. OTHER INFORMATION INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

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Label information: Vercet™ Lactide

Product code: M700

Reason for revision: New SDS

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Recommended restrictions: None

Prepared by: NatureWorks LLC Health and Safety

NOTICE REGARDING APPLICATION RESTRICTIONS:

The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.

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