PROMERUS
electronic materials

Material Safety Data Sheet

Material Name: Unity 2203P/US/Japan **Document: UNIT2203P**

* * * Section 1 - Chemical Product and Company Identification * * *

Chemical Name Unity 2203P

Company Identification: Promerus LLC
9921 Brecksville Road
Brecksville, OH 44141-3289
United States of America
Phone Number: 330-328-8186
Emergency Phone Number: 24 Hr CHEMTREC U.S. (800) 424-9300
24 Hr CHEMTREC International (703) 527-3887

* * * Section 2 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
96-48-0	γ-Butyrolactone	<95
Proprietary	Proprietary Hydrocarbon Polymer	<45
Proprietary	Proprietary Additive	<3

Component Information/Information on Non-Hazardous Components

This product has been evaluated using criteria specified in 29CFR 1910.1200 (Hazard Communication Standard).

This material is a MIXTURE. Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous and/or present at amounts below reportable limits.

IN JAPAN:THIS MATERIAL IS SOLELY FOR RESEARCH AND DEVELOPMENT USE. It is not known to be on the METI Inventory and cannot be distributed by itself or as part of another product in commerce. Its use is to be by or under the supervision of a technically qualified person. The physical, chemical and toxicological properties of this substance have not been fully determined.

* * * Section 3 - Hazards Identification * * *

Emergency Overview

Product is a clear liquid with mild odor.
This product is severely irritating to the eyes and skin and irritating to the respiratory system. Excessive inhalation of this material causes headache, dizziness, nausea and incoordination. Contains a component(s) that may be harmful if absorbed through the skin.

Target Organs

Eyes, Skin, Respiratory Tract, Central Nervous System.

Potential Health Effects: Eyes

This product may be severely irritating to the eyes. Symptoms include itching, burning, redness and tearing.

Potential Health Effects: Skin

Contact with liquid may produce severe skin irritation including redness and inflammation. Contains a component(s) that may be harmful if absorbed through the skin.

Potential Health Effects: Ingestion

This product may be harmful if it is swallowed. Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Small amounts of this product, if aspirated into the lungs, may cause mild to severe pulmonary injury.

Potential Health Effects: Inhalation

This product may be harmful by inhalation. This product may cause irritation to the respiratory system. Excessive inhalation of this material causes headache, dizziness, nausea and incoordination.

Medical Conditions Aggravated by Exposure

Chronic respiratory or skin conditions may temporarily worsen from exposure to this product.

HMIS Ratings: Health: 2 **Fire:** 1 **Physical Hazard:** 0 **Pers. Prot.:** D

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. If irritation develops or persists get immediate medical attention.

First Aid: Skin

For skin contact, wash immediately with soap and water for at least 15 minutes while removing contaminated clothing. If irritation persists, get medical attention.

First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting. Prevent aspiration of material into lungs.

First Aid: Inhalation

If inhaled, immediately remove the affected person to fresh air. If the affected person is not breathing, apply artificial respiration. If symptoms persist, get medical attention.

First Aid: Notes to Physician

This material, if aspirated into the lungs, may cause chemical pneumonitis; treat the affected person appropriately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

This product is an NFPA Level IIIB Combustible liquid.

Hot vapor or mists may be susceptible to spontaneous combustion when mixed with air. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time and are influenced by pressure changes. Therefore, ignition may occur below published ignition temperatures. Use of this product in processes involving elevated-temperatures, vacuum if subject to sudden ingress of air, sudden escape of vapor or mist, etc., must be thoroughly evaluated to assure safe operation. Exposing closed containers to heat may cause excessive pressure resulting in explosive rupture.

Hazardous Combustion Products

Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Extinguishing Media

Dry chemical, foam, carbon dioxide. Use water to cool fire-exposed containers and to protect personnel.

Fire Fighting Equipment/Instructions

Use self-contained breathing apparatus (SCBA) and full bunker turnout gear in a sustained fire. Wear protective clothing ensemble as defined in NFPA 1500 (1997, or as updated).

NFPA Ratings: Health: 2 **Fire:** 1 **Reactivity:** 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

* * * Section 6 - Accidental Release Measures * * *

Containment Procedures

Stop the flow of material. Block any potential routes to water systems. Contain the discharged material.

Clean-Up Procedures

Eliminate all ignition sources. Ventilate the area. If spill is large, be prepared to isolate the hazard area. Deny access to the spill area to persons who are not involved in the cleanup and/or who have not been properly trained in spill management of hazardous/flammable liquids. Absorb spill with inert material. Shovel material into appropriate container for disposal. Put material in suitable, covered, labeled containers. Ventilate the contaminated area.

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Avoid contact with skin and eyes. Avoid prolonged or repeated skin contact with this material. Avoid breathing vapors or mists of this product. Use this product with adequate ventilation. Keep away from heat, sparks, flames and direct sunlight. Product will begin to slowly decompose in the presence of ambient light. Handle under yellow light conditions. DO NOT cut, puncture or weld on or near this container. Do not apply pressure to this container. Containers should be bonded and grounded during transfer of material. Wash thoroughly after handling.

Storage Procedures

Store in a cool, dry, and well-ventilated area. Store in combustible storage area and away from heat and open flame. Avoid storing containers in direct sunlight as vapors may accumulate in the head space creating pressure. Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Keep container upright, when not in use, to prevent leakage. Open containers carefully and slowly. Emptied container may contain residual vapors or liquid which may ignite or explode. Do not reuse empty container without commercial cleaning or reconditioning.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines

A: General Product Information

Keep all exposures to a minimum.

B: Component Exposure Limits

ACGIH, OSHA and JSOH have not developed exposure limits for any of this product's components.

Engineering Controls

Ventilation should effectively remove and prevent buildup of any vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear chemical goggles; add face shield (if splashing is possible).

Personal Protective Equipment: Skin

Use chemical resistant impervious gloves. Wear chemical resistant protective clothing.

Personal Protective Equipment: Respiratory

If ventilation is not sufficient to effectively prevent buildup of aerosols or mists, appropriate NIOSH approved respiratory protection must be provided. Use respiratory protection in accordance with your company's respiratory protection program, local regulations or OSHA regulations under 29 CFR 1910.134.

Personal Protective Equipment: General

Eye wash fountain and emergency showers are recommended.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Colorless	**Odor:**	Mild
Physical State:	Liquid	**pH:**	Not available
Vapor Pressure:	1.5 mmHg @ 20ºC	**Vapor Density:**	3
Boiling Point:	204-205ºC (399-401ºF)	**Melting Point:**	-45ºC (-49ºF)
Solubility (H2O):	Not available	**Specific Gravity:**	1.120
Flash Point:	98.3ºC (209ºF)	**Flash Point Method:**	Open Cup
Auto Ignition:	456ºC (851ºF)	**LFL:**	1.4% (γ-Butyrolactone)
UFL:	16% (γ-Butyrolactone)		

Physical Properties: Additional Information

No additional information available.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

Stable under normal conditions.

Chemical Stability: Conditions to Avoid

Keep away from heat, ignition sources and incompatible materials. Avoid exposure to Ultraviolet light. Product will slowly degrade under ambient light.

Incompatibility

This product may react with strong acids, strong bases, strong oxidizing agents and strong reducing agents.

Hazardous Decomposition

Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Hazardous Polymerization

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute and Chronic Toxicity

A: General Product Information

The following additional information is based on data results for g-butyrolactone.

Skin Irritation (rabbit): 500uL Severe Irritant

B: Component Analysis - LD50/LC50

γ-Butyrolactone (96-48-0)

Test & Species	Data
Inhalation LC50 Rat	>5100 mg/m3/4H
Oral LD50 Rat	1540 mg/kg

Carcinogenicity

A: General Product Information

No information available for the product.

B: Component Carcinogenicity

γ-Butyrolactone (96-48-0)

IARC: Monograph 71, 1999; Supplement 7, 1987; Monograph 11, 1976 (Group 3 (not classifiable))

Chronic Toxicity

Chronic overexposure may cause central nervous system depression.

* * * Section 12 - Ecological Information * * *

Ecotoxicity
A: General Product Information
No ecotoxicity testing has been conducted on this product.
B: Component Analysis - Ecotoxicity - Aquatic Toxicity
No ecotoxicity data are available for this product's components.
Environmental Fate
No additional information available.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions
Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA. Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.
Disposal Instructions
Dispose of waste by incineration, in accordance with local regulations and available facilities.
Liquids cannot be disposed of in a landfill.

* * * Section 14 - Transportation Information * * *

US DOT Information
Shipping Name: This product is NOT REGULATED for transportation.

TDG Information
Shipping Name: This product is NOT REGULATED for transportation.

ICAO Information
Shipping Name: This product is NOT REGULATED for transportation.

IATA Information
Shipping Name: This product is NOT REGULATED for transportation.

ADR Information
Shipping Name: This product is NOT REGULATED for transportation.

RID Information
Shipping Name: This product is NOT REGULATED for transportation.

IMDG Information
Shipping Name: This product is NOT REGULATED for transportation.

* * * Section 15 - Regulatory Information * * *

Additional Regulatory Information
A: General Product Information
IN US: Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are either exempt from listing (i.e. polymers, hydrates) or are listed on the confidential inventory as declared by the supplier.

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B: Component Analysis - Inventory

Component	CAS #	TSCA	Canada	EU	METI
γ-Butyrolactone	96-48-0	Yes	DSL	EINECS	Yes
Proprietary Hydrocarbon Polymer	Proprietary	Yes	NDSL	No	No
Proprietary Additive	Proprietary	Yes	NDSL	No	No

C: Japan List of Designated Chemical Substances

None of the components in this product are listed on the Japanese List of Hazardous Substances.

US Federal Regulations

A: General Product Information

This product does not contain any substance(s) subject to the reporting requirements (i.e., at or above de minimis quantities) of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) 40 CFR 372.

B: Component Analysis

None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

SARA 311/312 - Acute Health: Yes **Chronic Health:** No **Fire:** Yes **Pressure:** No **Reactive:** No

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

None of this product's components are listed on the state lists from CA, MA, MN, NJ, PA, or RI.

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

* * * Section 16 - Other Information * * *

Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.

Key/Legend

ACGIH: American Conference of Governmental Industrial Hygienists
A1: Confirmed human carcinogen
A2: Suspected human carcinogen
A3: Animal carcinogen
DSL: Canadian Domestic Substances List
CAS No: Chemical Abstract Service Registry Number
EEC: European Economic Community

IARC: International Agency for Research on Cancer
Group1: Carcinogenic to humans
Group2A: Probably carcinogenic to humans
Group2B: Possibly carcinogenic to humans
Group3: Unclassifiable as a carcinogen to humans
JSOH: Japan Society for Occupational Health
LVE: Low Volume Exemption
METI: Ministry of Environment, Trade, and Industry
MSHA: Mine Safety and Health Administration
NIOSH: National Institute for Occupational Safety and Health
NDSL: Non-Domestic Substances List
NTP: National Toxicology Program
N/A: Not Applicable
N/E: None Established
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
PNOC: Particulates Not Otherwise Classified
RTK: Right To Know
STEL: Short Term Exposure Limit (15 minute Time Weighted Average)
TLV: Threshold Limit Value
C: Ceiling limit
S: Skin notation refers to the potential significant
contribution to the overall exposure by the cutaneous route
Including mucous membranes and the eyes and by direct skin
contact with the substance
WEEL: Workplace Environmental Exposure Level
WHMIS: Canadian Workplace Hazardous Materials Information System

End of Sheet UNIT2203P