Safety Data Sheet

Issue Date 31-Jan-2014 **Revision Date:** 08-Jun-2015 **Version** 2

1. IDENTIFICATION

Product Identifier

Product Name United 975 UNITED CARUSOL®

Other means of identification

SDS # UNITED-975

Recommended use of the chemical and restrictions on use

Recommended Use Liquid Permanganate

Uses Advised Against For industrial and institutional use only.

Details of the supplier of the safety data sheet

Supplier Address

United Laboratories, Inc.
320 37th Avenue
St. Charles, IL 60174
www.unitedlabsinc.com
www.unitedlabsinc.ca

Emergency Telephone Number

Company Phone Number 800-323-2594 (to reorder)

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Classification

Oxidizing solid	Category 2
Acute Toxicity	Category 4
Aquatic Toxicity (acute)	Category 1
Aquatic Toxicity (chronic)	Category 1

Label elements

Signal word DANGER

Hazard statements

May intensify fire, oxidizer
Harmful, if swallowed
Very toxic to aquatic life with long lasting effects

Other Hazards

Eye Contact
Liquid permanganate may cause damage to the eye.

Skin Contact
Momentary contact of solution at room temperature will leave brown stains and may be irritating to some who are more sensitive. Prolonged contact is damaging to the skin.

Inhalation
Acute inhalation toxicity data are not available. However, airborne concentrations of sodium permanganate in the form of mist may cause irritation to the respiratory tract for some.

Ingestion
Liquid permanganate, if swallowed, may cause burns to mucous membranes of the mouth, throat, esophagus, and stomach.

Appearance Odorless dark purple liquid **Physical State** Liquid **Odor** Odorless

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight%	Hazard Data
Sodium Permanganate	10101-50-5	19.5-21.0	**PEL/C** 5mg Mn per m^3 of air **TLV-TWA** 0.2mg MN per m^3 of air

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact Immediately flush eyes with large amounts of water for at least 15 minutes holding lids apart to ensure flushing the entire surface. Do not attempt to neutralize chemically. Seek medical attention immediately. Note to physicians: Decomposition products are alkaline. Brown stain formed is insoluble manganese dioxide.

Skin Contact Immediately wash contaminated areas with water. Remove contaminated clothing or footwear. Wash clothing and decontaminate footwear before reuse. Seek medical attention if irritation is severe or persistent.

Inhalation Remove person from contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.

Ingestion	Never give anything by mouth to an unconscious or convulsing person. If person is conscious give large quantities of water or milk. Seek medical attention immediately.
Not to Physician	For inhalation, consider oxygen. Avoid gastric lavage or emesis. Decomposition products are alkaline. Insoluble decomposition product formed is brown colored manganese.

Most important symptoms and effects

Symptom No information available.

5. FIRE-FIGHTING MEASURES

NFPA* Hazard Signs
Health Hazard 1 = Materials that under emergency conditions, can cause significant irritation.
Materials that on the skin could cause irritation.

Flammability Hazard 0 = Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone and sand.

Instability Hazard 0 = Materials that in themselves are normally stable, even under fire conditions.

Special Hazard OX = Oxidizer

Suitable Extinguishing Media
Use large quantities of water. Water will turn pink to purple when in contact with potassium permanganate. Dike to contain. Do not use dry chemicals, CO_2, or foams, because they are not effective.

Special Firefighting Procedures
If material is involved in fire, flood with water. Cool all affected containers with large quantities of water. Apply water from as far a distance as possible. Wear self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion
Powerful oxidizing material. May decompose spontaneously if exposed to heat (135°C / 275°F). May be explosive in contact with certain other chemicals (Section 10). May react violently with finely divided and readily oxidizable substances. Increases burning rate of combustible material.

Thermal Decomposition Product
Combustion: oxides of potassium, oxides of manganese. Fire may product irritating, poisonous and/or corrosive fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Personnel should wear protective clothing suitable for the task. Remove all ignition sources and incompatible materials before attempting clean up.

Environmental Precautions
Do not flush into sanitary sewer system or surface water. If accidental release into the environment occurs, inform the responsible authorities. Keep the product away from drains, sewers, surface and ground water and soil.

Steps to be taken if material is released or spilled
NOTE: Do not use paper or cloth to clean up spills. It may catch fire. Contain spill by collecting the liquid in a pit or holding behind a dam (sand or soil). Proceed with either of the following two options depending upon the size of the spill and the availability of the neutralizing agents.

Option # 1: Dilute to approximately 6% with water, and then reduce with sodium thiosulfate, a bisulfite or ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid (10% w/w) to promote reduction. Neutralize with sodium carbonate to neutral pH, if acid was used. Decant or filter and deposit sludge in approved landfill. Where permitted, the sludge may be drained into sewer with large quantities of water.

Option # 2: Absorb with inert media like diatomaceous earth or inert floor dry, collect into a drum and dispose of properly. Does not use saw dust or other incompatible media. Disposal of all materials shall be in full and strict compliance with all federal, state, and local regulations pertaining to permanganates.
To clean contaminated floors, flush with abundant quantities of water into sewer, if permitted by federal, state, and local regulations. If not, collect water and treat as described above.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Ensure adequate ventilation. Wash hands thoroughly with soap and water after handling permanganate solution. Do not eat, drink or smoke when working with sodium permanganate. Wear proper protective equipment. Remove clothing if it becomes contaminated.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in accordance with NFPA 430 requirements for Class II oxidizers. Protect containers from physical damage. Store in a cool, dry area in closed containers. Segregate from acids, peroxides, formaldehyde, and all combustible, organic, or easily oxidizable materials including antifreeze and hydraulic fluid.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye/Face
Face shield, goggles, or safety glasses with side shields should be worn. Provide eyewash in working area.

Gloves
Rubber or plastic gloves should be worn.

Other Protective Equipment
Chemically resistant clothing covering arms and legs, and rubber or plastic apron should be worn. **Caution:** If clothing becomes contaminated, wash off immediately.

Respiratory Protection
In cases where overexposure to dust may occur, the use of an approved NIOSH-MSHA dust respirator or an air supplied respirator is advised. Engineering or administrative controls should be implemented to control dust.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid		
Appearance	Dark purple liquid	**Odor**	Odorless
Color	Dark purple	**Odor Threshold**	Not determined

Property	**Values**	**Remarks • Method**
pH	5-8	
Melting Point/Freezing Point	4ºC/ 24.8ºF	Literary Reference
Boiling Point/Boiling Range	>101ºC/> 213.8ºF	
Flash Point	Does not flash	
Evaporation Rate	As water	
Flammability (Solid, Gas)	Not flammable	
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	760mmHg at 105°C	
Vapor Density	Not determined	
Specific Gravity	1.15-1.17	(1=Water)
Water Solubility	Miscible with water	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	

Property	**Values**
Dynamic Viscosity	Not determined
Explosive Properties	Explosive in contact with sulfuric acid or peroxides, or readily oxidizable substance.
Oxidizing Properties	Strong oxidizer. May ignite wood and clothing.
VOC Content	Not determined

10. STABILITY AND REACTIVITY

Reactivity
Not applicable.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to Avoid
Contact with incompatible materials or heat (135ºC / 275ºF) could result in violent exothermic chemical reaction.

Incompatible Materials
Acids, peroxides, formaldehyde, anti-freeze, hydraulic fluids and all combustible organic or readily oxidizable inorganic materials including metal powders. With hydrochloric acid, chlorine gas is liberated.

Hazardous Decomposition Products
When involved in a fire, sodium permanganate may form corrosive fumes.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
The product may be absorbed into the body by inhalation of the mist. Airborne concentrations of sodium permanganate in the form of mist may cause irritation to the respiratory tract for some. Major effects of exposure: *possible* respiratory disorder, cough.

Ingestion
Harmful, if swallowed. Ingestion may cause nausea, vomiting, sore throat, stomach-ache, and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

Skin Contact
Momentary contact of solution at room temperature will leave brown stains and may be irritating to some who are more sensitive. Prolonged contact is damaging to the skin.

Eye Contact
Liquid permanganate may cause damage to the eye.

Acute Toxicity
LD50 value is not available for sodium permanganate, but is expected to be similar to that of potassium permanganate on a dry weight basis. The toxicity data for sodium permanganate (CAS# 10101-50-5) is given below:

LD 50 oral rat: 780 mg/kg male (14 days); 525 mg/kg female (14 days). Harmful if swallowed. ALD: 10g. Ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

Chronic Toxicity
No known cases of chronic poisoning due to permanganates have been reported. Prolonged exposure, usually over many years, to heavy concentrations of manganese oxides in the form of dust and fumes may lead to chronic manganese poisoning, chiefly involving the central nervous system.

Carcinogenicity
Sodium permanganate has not been classified as a carcinogen by ACGIH, NIOSH, OSHA, NTP, or IARC.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No aquatic toxicity data is available for sodium permanganate

Persistence/Degradability
Permanganate has low estimated lifetime in the environment, being readily converted by oxidizable materials to insoluble MnO_2 .

Bioaccumulation
In non-reducing and non-acidic environments, MnO_2 is insoluble and has a very low bioaccumulative potential.

Mobility
Miscible to water.

Other Adverse Effects
Harmful to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Offer surplus and non-recyclable product or solutions to a licensed disposal company. Disposal of all materials shall be in full and strict compliance with all federal, state, and local regulations. This material and its container must be disposed of as hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. When it becomes a waste, potassium permanganate is considered a D001 hazardous (ignitable) waste. For disposal of potassium permanganate solutions, follow procedures in Section 6 and deactivate the permanganate to insoluble manganese dioxide. Dispose of it in a permitted landfill. Contact Carus Corporation for additional recommendations. Packaging materials must be triple rinsed to remove all residues prior to re-cycling or disposal as a

14. TRANSPORT INFORMATION

DOT

ID	UN 3214
Proper Shipping Name	Permanganates, inorganic, aqueous solution, n.o.s. (contains sodium permanganate)
Hazard Class	Oxidizer
Packing Group	II
Division	5.1

IATA

ID	UN 3214
Proper Shipping Name	Permanganates, inorganic, aqueous solution, n.o.s. (contains sodium permanganate)
Hazard Class	Oxidizer
Packing Group	II
Division	5.1

IMDG

ID	UN 3214
Proper Shipping Name	Permanganates, inorganic, aqueous solution, n.o.s. (contains sodium permanganate)
Hazard Class	Oxidizer
Packing Group	II
Division	5.1

15. REGULATORY INFORMATION

Markings According to EU Guidlines

The product has been classified and marked in accordance with EU directives/ordinances on hazardous materials.

US Federal Regulations

Chemical Inventory Status

Chemical Name	Cas-No	TSCA	EC	Japan	Australian	China	Korea	DSL	NDSL	New Zealand	PHIL
Sodium permanganate	10101-50-5	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR, Canada) and the MSDS contains all of the information required by the CPR.

Federal, State and International Regulations

Ingredient	Cas-No	SARA 302		SARA 313	
		RQ	TPQ	List	Chemical Category
Sodium permanganate	10101-50-5	N/A	N/A	No	Yes

Ingredient	Cas-No	CERCLA	RCRA	TSCA 8(d)
Sodium permanganate	10101-50-5	No	D001	No

Ingredient	Cas-No	CWC	TSCA 12(b)	CDTA	SARA 311/312
Sodium permanganate	10101-50-5	No	No		4545 Kg

Ingredient	Cas-No	Acute	Chronic	Fire	Pressure	Reactivity	Pure/Liquid
Sodium permanganate	10101-50-5	Yes	Yes	No	No	No	Liquid

Ingredient	Cas-No	Australian Hazchem	WHMIS	IDL
Sodium permanganate	10101-50-5	IYE	C,D2B	No

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	1	0	0	OX
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	1	0	0	D

Issue Date 31-Jan-2014
Revision Date: 08-Jun-2015
Revision Note New format

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 guidance 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