

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR
DISPOSING OF PRODUCT

MSDS CODE AND NAME : JCLE105 JEFFCOOL® E105
DATE ISSUED : 3/31/2003
DATE PRINTED : 5/5/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**MATERIAL IDENTITY****MSDS CODE AND NAME****JCLE105 JEFFCOOL® E105****Chemical Name and/or Family or Description:**

Industrial coolant and/or heat transfer fluid

COMPANY INFORMATION

Huntsman Petrochemical Corporation
P.O. Box 27707
Houston, TX 77227-7707

TELEPHONE NUMBERS**Transportation Emergency**

Company: (409) 727-0831

CHEMTREC: (800) 424-9300

Medical Emergency: (409) 722-9673 (24 Hour)

General MSDS Assistance: (713) 235-6432

Technical Information: (512) 459-6543

2. COMPOSITION AND INFORMATION ON INGREDIENTS

THE CRITERIA FOR LISTING COMPONENTS IN THE COMPOSITION SECTION ARE AS FOLLOWS: CARCINOGENS ARE LISTED WHEN PRESENT AT 0.1 % OR GREATER; COMPONENTS WHICH ARE OTHERWISE HAZARDOUS ACCORDING TO OSHA ARE LISTED WHEN PRESENT AT 1.0 % OR GREATER; NON-HAZARDOUS COMPONENTS ARE LISTED AT 3.0 % OR GREATER. THIS IS NOT INTENDED TO BE COMPLETE COMPOSITIONAL DISCLOSURE. REFER TO SECTION 14 FOR APPLICABLE STATES' RIGHT TO KNOW AND OTHER REGULATORY INFORMATION.

Product and/or Component(s) Carcinogenic According to:

OSHA IARC NTP OTHER NONE X

Composition:

Chemical Name	CAS Number	Exposure Limits	Range in %
1,2-ethanediol (Common Name-Ethylene glycol)	107-21-1	50 ppm CEILING-OSHA 39.4 ppm CEILING-ACGIH (AEROSOL) (A4)	35.00-49.99
Deionized water	7732-18-5		35.00-49.99
Phosphoric acid, dipotassium salt	7758-11-4		1.00-2.99

REFER TO SECTION 16 OF THE MSDS FOR PROHIBITED PRODUCT APPLICATIONS.

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3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Appearance:

Clear liquid; may be colored by customer request

Odor:

Mild odor

WARNING STATEMENT

WARNING !

HARMFUL IF SWALLOWED
MAY CAUSE DIZZINESS AND DROWSINESS
MAY CAUSE EYE IRRITATION
ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE
DAMAGE

ATTENTION !

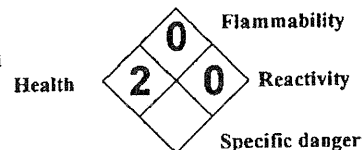
FOR INDUSTRIAL USE ONLY
CAN CAUSE LIVER AND KIDNEY DAMAGE IF SWALLOWED
CONTAINS ETHYLENE GLYCOL WHICH MAY CAUSE BIRTH DEFECTS BASED ON
ANIMAL DATA

THIS PRODUCT IS NOT TO BE USED IN FOOD, DRUG, COSMETIC OR POTABLE
WATER APPLICATIONS

**Hazardous Material
Information System
(United States)**

Health	2
Fire	0
Reactivity	0
Personal protection	()

**National Fire
Protection Association
NFPA (United States)**



POTENTIAL HEALTH EFFECTS

Primary Route of Exposure

Eye X Skin X Inhalation X Ingestion

Effects of Overexposure

Acute:

Eyes:

May cause minimal irritation, experienced as temporary discomfort.

Skin:

Brief contact is not irritating. Prolonged contact, as with clothing wetted with material, may cause defatting of skin or irritation, seen as local redness with possible mild discomfort. Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact; see other effects, below, and Section 11 for information regarding potential long term effects.

Inhalation:

Vapors or mist, in excess of permissible concentrations, or in unusually high concentrations generated from spraying, heating the material or as from exposure in poorly ventilated areas or confined spaces, may cause irritation of the nose and throat, headache, nausea, and drowsiness. Prolonged or repeated overexposure may result in the absorption of potentially harmful amounts of material.

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Ingestion: Contains ethylene glycol and/or diethylene glycol, which are toxic when swallowed. A lethal dose for an adult is 1-2 ml per kilogram, or about 4 ounces (one-half cup). Symptoms include headache, weakness, confusion, dizziness, staggering, slurred speech, loss of coordination, faintness, nausea and vomiting, increased heart rate, decreased blood pressure, difficulty breathing and seeing, pulmonary edema, unconsciousness, convulsions, collapse, and coma. Symptoms may be delayed. Decreased urine output and kidney failure may also occur. Severe poisoning may cause death.

Aspiration may occur during swallowing or vomiting, resulting in lung damage.

Sensitization Properties: Unknown

Chronic:

Repeated ingestion may cause kidney damage.

Medical Conditions Aggravated by Exposure:

Repeated overexposure may aggravate existing kidney disease.

Other Remarks:

None

4. FIRST AID MEASURES

Eyes:

Flush eyes with plenty of water for several minutes. Get medical attention if eye irritation persists.

Skin:

Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Ingestion:

If person is conscious and can swallow, immediately give two glasses of water (16 oz.) but do not induce vomiting. If vomiting occurs, give fluids again. Have physician determine if condition of person will permit induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or convulsing person.

Inhalation:

If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention immediately.

Other Instructions:

Ethylene glycol (EG) and diethylene glycol (DEG) intoxication may initially produce behavioral changes, drowsiness, vomiting, diarrhea, thirst, and convulsions. EG and DEG are nephrotoxic. End stages of poisoning may include renal damage or failure with acidosis. Supportive measures, supplemented with hemodialysis if indicated, may limit the progression and severity of toxic effects.

FOR ETHYLENE GLYCOL POISONING intravenous ethanol is a recognized antidotal treatment ; other antidotal treatments also exist for EG poisoning. FOR DIETHYLENE GLYCOL POISONING the role of intravenous ethanol in the treatment is unclear but it may be of benefit in view of structural and toxicological similarities to ethylene glycol. Contact a Poison Center for further treatment information.

Aspiration of this product during induced emesis may result in severe lung injury. If evacuation of stomach is necessary, use method least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact a Poison Center for additional treatment information.

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5. FIRE-FIGHTING MEASURES

Ignition Temperature - AIT (degrees C):

Not applicable.

Flash Point (degrees C):

Not applicable.

Flammable Limits % (Lower-Upper):

Lower: Not Determined

Upper: Not Determined

Recommended Fire Extinguishing Agents And Special Procedures:

Product is not combustible. Use agent suitable for surrounding fire. Use water spray to cool fire-exposed containers.

Unusual or Explosive Hazards:

None

Special Protective Equipment for Firefighters:

Wear full protective clothing and positive pressure breathing apparatus. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products.

6. ACCIDENTAL RELEASE MEASURES (Transportation Spills: CHEMTREC (800)424-9300)

Procedures in Case of Accidental Release, Breakage or Leakage:

Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

7. HANDLING AND STORAGE

Precautions to be Taken in

Handling:

Minimum feasible handling temperatures should be maintained.

Storage:

Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment (Type)

Eye/Face Protection:

Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.

Skin Protection:

Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.

Respiratory Protection:

Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.

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Ventilation:

Adequate to meet component occupational exposure limits (see Section 2).

Exposure Limit for the Total Product:

None established for product; refer to Section 2 for component exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Clear liquid; may be colored by customer request

Odor:

Mild odor

Boiling Point (degrees C):

93.3 - 121.1 (200 - 250 F)

Melting/Freezing Point (degrees C):

-36.5 (-34 F)

Specific Gravity (water=1):

1.08

pH:

10.2

Vapor Pressure:

> .1 mmHg at 20 C (68 F)

Viscosity:

< 18.7 cSt at 20 C (68 F)

VOC Content:

Not Determined

Vapor Density (Air=1):

2.1

Solubility in Water (%):

>10

Other:

None

10. STABILITY AND REACTIVITY

This Material Reacts Violently With:

Air Water Heat Strong Oxidizers Others None of these X

Comments:

None

Products Evolved When Subjected to Heat or Combustion:

Not applicable.

Hazardous Polymerizations:

DO NOT OCCUR

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11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION (ANIMAL TOXICITY DATA)

Oral:

Animal data does not reflect human toxicity; see Sections 3 & 11

Inhalation:

Not determined.

Dermal:

LD50 Believed to be > 1.00 - 2.00 g/kg (rabbit) slightly toxic

IRRITATION INDEX, ESTIMATION OF IRRITATION (SPECIES)

Skin:

(Draize) Believed to be < .50 /8.0 (rabbit) no appreciable effect

Eyes:

(Draize) Believed to be < 15.00 /110 (rabbit) no appreciable effect

Sensitization:

Not determined.

Other:

Oral administration of ethylene glycol to pregnant experimental animals has been shown to cause birth defects in the offspring. These effects were not seen when ethylene glycol was administered by dermal application or by inhalation. Continuous ingestion of a diet containing 1% or 2% ethylene glycol for two years produced liver and kidney damage, and bladder stones in rats.

12. DISPOSAL CONSIDERATIONS:

Waste Disposal Methods:

This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

Remarks:

To prevent contamination of drinking water supplies, and poisoning of children, aquatic life, wildlife, and farm and domestic animals, ethylene glycol products such as used antifreeze solution, regardless of quantity, should never be discarded onto the ground, into surface waters, or into storm sewers.

13. TRANSPORT INFORMATION

Transportation

DOT:

Proper Shipping Name:

Not regulated for drums

Hazard Class:

Not regulated

Identification Number:

Not regulated

Packing Group:

Not regulated

Label Required:

Not regulated

Depending on container size, spills of this product may require reporting under SARA 304 and/or CERCLA 102(A) regulations. Please refer to Sections 2 and 14 of MSDS for composition and component RQ information.

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IMDG

Proper Shipping Name:
Not evaluated

ICAO

Proper Shipping Name:
Not evaluated

TDG

Proper Shipping Name:
Not regulated

Hazard Class:
Not regulated

Identification Number:
Not regulated

Label Required:
Not regulated

14. REGULATORY INFORMATION

Federal Regulations:

SARA Title III:

Section 302/304 Extremely Hazardous Substances

Chemical Name	CAS Number	Range in %	TPQ	RQ
None.				

Section 311 Hazardous Categorization:

Acute X Chronic X Fire Pressure Reactive N/A

Section 313 Toxic Chemical

Chemical Name	CAS Number	Concentration
1,2-ethanediol (Common Name-Ethylene glycol)	107-21-1	35.00-49.99

CERCLA 102(a)/DOT Hazardous Substances:

Chemical Name	CAS Number	Range in %	RQ
1,2-ethanediol (Common Name-Ethylene glycol)	107-21-1	35.00-49.99	5000

States Right-to-Know Regulations:

Chemical Name	State Right-to-know
1,2-ethanediol	FL, IL, MA, NJ, PA, RI

California Prop. 65:

The following detectable components of this product are substances, or belong to classes of substances, known to the State of California to cause cancer and/or reproductive toxicity.

Chemical Name	CAS Number
None.	

INTERNATIONAL REGULATIONS:

TSCA Inventory Status:

This product, or its components, are listed on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

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WHMIS Classification:

Class D, Div 1, Subdiv B: Toxic Class D, Div 2, Subdiv A: Teratogenic

Canadian Inventory Status:

This product, or its components, are listed on or are exempt from the Canadian Domestic Substance List (DSL).

EINECS Inventory Status:

This product, or its components, are listed on or are exempt from the European Inventory of Existing Chemical Substances (EINECS) or the European List of Notified Chemical Substances (ELINCS).

Australian Inventory Status:

This product, or its components, are listed on or are exempt from the Australian Inventory of Chemical Substances (AICS).

Japan Inventory Status:

Not determined

15. ENVIRONMENTAL INFORMATION

Aquatic Toxicity:

Not determined.

Mobility:

Not determined.

Persistence and Biodegradability:

This product is estimated to have a rapid rate of biodegradation; greater than or equal to 60 % degradation over a test period of 7 days or less.

Potential to Bioaccumulate:

This product is estimated to have a low potential to bioconcentrate.

Remarks:

None

16. OTHER INFORMATION 3/31/2003

Acute or chronic oral consumption of products containing ethylene glycol can produce significant adverse health effects, including death, in humans and animals. Keep out of reach of children and pets.

Due to toxicity considerations with ethylene glycol, the following applications are considered to be prohibited applications: Potable Water Applications; Food, Drug and Cosmetic Formulations; Antifreeze for potable water systems in recreational vehicles and seasonal homes; Antifreeze for fire sprinkler systems.

Huntsman recommends that all exposures to this product be minimized by strictly adhering to recommended occupational controls procedures to avoid any potential adverse health effects.

THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE. IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT FOR PURPOSE OF HAZARD COMMUNICATION AS PART OF HUNTSMAN'S PRODUCT SAFETY PROGRAM. IT IS NOT INTENDED TO CONSTITUTE PERFORMANCE INFORMATION CONCERNING THE PRODUCT. NO EXPRESS WARRANTY, OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE WITH RESPECT TO THE PRODUCT OR THE INFORMATION CONTAINED HEREIN. DATA SHEETS ARE AVAILABLE FOR ALL HUNTSMAN PRODUCTS. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL HUNTSMAN PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE AND YOU ARE ENCOURAGED AND REQUESTED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN.

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**~~TO DETERMINE APPLICABILITY OR EFFECTS OF ANY LAW OR REGULATION WITH RESPECT TO THE
PRODUCT, USER SHOULD CONSULT HIS LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY.
HUNTSMAN DOES NOT UNDERTAKE TO FURNISH ADVICE ON SUCH MATTERS.~~**

Date Issued: 3/31/2003.

Inquiries regarding MSDS should be directed to:

**HUNTSMAN
Coordinator, Product Safety
P.O. Box 27707
Houston, TX 77227-7707**