Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of open flames and sparks, of heat. Non-flammable in presence of oxidizing materials, of reducing materials, of combustible materials.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Not available.

Section VI. Accidental Release Measures

Small Spill	Absorb with an inert material and place in an appropriate waste disposal container.
Large Spill	Corrosive liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside container. DO NOT touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate.

Section VII. Handling and Storage

Precautions	Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. Never add water to this product In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes Keep away from incompatibles such as alkalis.

Storage	Keep container dry. Keep in a cool place. Ground all equipment containing material. Corrosive materials should be stored in a separate safety storage cabinet or room.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section IX. Physical and Chemical Properties

Physical State and Appearance	Liquid.	Odor	Pungent chlorine.
Taste	Not available.		
Molecular Weight	Not applicable.		
pH (1% soln/water)	0.5 [Acidic.]	Color	Clear Amber.
Boiling Point	100 C (212 F)		
Melting Point	-20 C (-4 F)		
Critical Temperature	Not available.		
Specific Gravity	1.2 (Water = 1)		
Vapor Pressure	The highest known value is 17.2 mm of Hg (@ 20 C) (Water).		
Vapor Density	The highest known value is 1 (Air = 1) (Water).		
Volatility	Not available.		

Odor Threshold	Not available.
Evaporation rate	Not available.
Viscosity	Not available.
Water/Oil Dist. Coeff.	The product is much more soluble in water.
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, methanol.
Solubility	Easily soluble in cold water, hot water, methanol. Insoluble in diethyl ether, n-octanol.

Section X. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Contact with Aluminum and Zinc may release hydrogen gas.
Incompatibility with various substances	Reactive with alkalis. Non-reactive with organic materials, metals.
Corrosivity	Not considered to be corrosive for metals and glass according to our database.
Special Remarks on Reactivity	Hazardous Decomposition Products: May include toxic fumes of chlorine and aluminum compounds.
Special Remarks on Corrosivity	Not available.
Hazardous Polymerization	No.

Section XI. Toxicological Information

Routes of Entry	Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 25818 mg/kg (Rat) (Calculated value for the mixture).

Chronic Effects on Humans	CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.
Other Toxic Effects on Humans	Extremely hazardous in case of ingestion. Very hazardous in case of skin contact (irritant), of eye contact (irritant, corrosive). Hazardous in case of inhalation. Corrosive to skin and eyes on contact. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May cause redness, defatting and dermatitis of the exposed area. Repeated or prolonged contact may result in conjunctivitis.
Special Remarks on Other Toxic Effects on Humans	Not available.

Section XII. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks	Not available.

on the Products of Biodegradation	

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.

Section XIV. Transport Information

TDG Classification	CLASS 8: Corrosive liquid. Class 9.2: Environmentally hazardous material.
Shipping name	Corrosive liquids n.o.s. (Aluminum chlorohydrate)
PIN	UN1760
Packing Group	III
Special Provisions for Transport	No additional remark.

Section XV. Other Regulatory Information

Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Section XVI. Other Information

References	Not available.
Other Special Considerations	Not available.
Validated by Hardev Bendick on 7/7/99.	Verified by Hardev Bendick.
Information Contact	EH&S Department Vancouver, B C. (604) 273-1441

FOR UPDATED COPIES OF AN MSDS, PLEASE CONTACT YOUR LOCAL VAN WATERS & ROGERS LTD. BRANCH.

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Van Waters & Rogers Ltd. expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided.

========== END OF MSDS ==========

/HMIS_Msds/HMIS/056/BWPML.HTM (4 hits)

PERCOL 763

MSDS Safety Information

TOP

FSC: 6850 **MSDS Date:** 07/16/1992 **MSDS Num:** BWPML

Submitter: N EN **LIIN:** 00N057185 **Tech Review:** 02/03/1995 **Status CD:** C

Product ID: PERCOL 763 **MFN:** 01

Article: N **Kit Part:** N

Responsible Party **Cage:** 4S341

Name: ALLIED COLLOIDS INC

Address: 2301 WILROY RD **Box:** 820

City: SUFFOLK **State:** VA **Zip:** 23439-0820

Country: US

Info Phone Number: 804-538-3700

Emergency Phone Number: 800-424-9300 (CHEMTREC)

Preparer's Name: N/P

Proprietary Ind: N **Review Ind:** N

Published: Y **Special Project CD:** N

Contractor Summary

TOP

Cage:4S341 **Name:**ALLIED COLLOIDS INC

Address:UNKNOWN
City:SUFFOLK State:VA Zip:23434

Country:US Phone:804-934-3700

Ingredients TOP

Cas: 124-04-9 Code: M RTECS #: AU8400000 Code: M

Name: ADIPIC ACID (CERCLA)

% Text: N/K Environmental Wt:
Other REC Limits: N/K

OSHA PEL: N/K (FP N)	Code: M	OSHA STEL:	Code:
ACGIH TLV: 5 MG/M3; 9495	Code: M	ACGIH STEL: N/P	Code:
EPA Rpt Qty: 5000 LBS		DOT Rpt Qty: 5000 LBS	

Ozone Depleting Chemical: N

Cas: 69418-26-4 Code: M RTECS #: 1012342CD Code: M

Name: COPOLYMER ACRYLAMIDE:DMAEA Q. (MECL)

% Text: N/K Environmental Wt:
Other REC Limits: N/K

OSHA PEL: N/K (FP N)	Code: M	OSHA STEL:	Code:
ACGIH TLV: N/K (FP N)	Code: M	ACGIH STEL: N/P	Code:
EPA Rpt Qty:		DOT Rpt Qty:	

Ozone Depleting Chemical:

Cas: 7732-18-5 Code: M RTECS #: ZC0110000 Code: M

Name: WATER

% Text: N/K Environmental Wt:
Other REC Limits: N/K

OSHA PEL: N/K (FP N)	Code: M	OSHA STEL:	Code:
ACGIH TLV: N/K (FP N)	Code: M	ACGIH STEL: N/P	Code:
EPA Rpt Qty:		DOT Rpt Qty:	

Ozone Depleting Chemical: N

Health Hazards Data TOP

LD50 LC50 MixtureNONE SPECIFIED BY MANUFACTURER.

Route Of Entry Inds - Inhalation:YES	Skin:NO	Ingestion:NO
Carcinogenicity Inds - NTP:NO	IARC:NO	OSHA:NO

Health Hazards Acute And Chronic

ACUTE:CONTACT WITH EYE MAY PRODUCE IRRITATION AND/OR REDNESS. INHALED DUST MAY CAUSE SOME RESPIRATORY IRRITATION.

Explanation Of Carcinogenicity

NOT RELEVANT.

Signs And Symptions Of Overexposure

SEE HEALTH HAZARDS.

Medical Cond Aggravated By Exposure

NONE SPECIFIED BY MANUFACTURER.

First Aid Information TOP

EYE:IMMED FLUSH W/PLENTY OF WATER FOR @ LEAST 15 MINS. CALL PHYS. INGEST:DO NOT GIVE AN EMETIC UNLESS DIRECTED BY PHYS. NEVER GIVE ANYTHING BY MOUTH TO UNCON PERSON. SKIN:REMOVE CONTAMD CLTHG & LAUNDER BEFORE REUSE. WASH AFFECTED AREA W/SOA P & WATER. INAL:REMOVE TO FRESH AIR.

Spill Release Procedures TOP

PROD BECOMES SLIPPERY & DFCLT TO HNDL WHEN WET; SPILLS ARE BEST HDNLD WHILE STILL DRY. SWEEP UP & COLLECT DRY PROD. ABSORB WET PROD W/VERMICULITE/OTHER INERT MATL. THEN WATER WASH AREA TO WASTE TREATMENT TO ELIMINATE SLIP HAZARD.

Neutralizing Agent

NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Methods TOP

DISP MUST BE ARRANGED I/A/W LOCAL, ST & FED REGS. THIS MATL, WHEN UNADULTERATED, IS NOT RCRA REGULATED HAZ WASTE. HOWEVER, LOCAL DISP REGS WILL OFTEN APPLY. CARE MUST BE TAKEN TO PVNT ENVIRON CONTAM FROM DISP OF MATL, RESIDUE & CNTNRS.

Handling and Storage Precautions

TOP

DO NOT GET IN EYES, ON SKIN, ON CLTHG. AVOID PRLNGD/RPTD INHAL OF DUST. AVOID PRLNGD/RPTD SKIN CONT. CAUTION -SLIP HAZS - SEE SECTION IV AND/OR VII.

Other Precautions

NONE SPECIFIED BY MANUFACTURER.

Fire and Explosion Hazard Information

TOP

Flash Point Method: N/P

Flash Point: **Flash Point Text:** N/A

Autoignition Temp: **Autoignition Temp Text:** N/A

Lower Limits: N/A **Upper Limits:** N/A

Extinguishing Media

CARBON DIOXIDE, DRY CHEMICAL OR FOAM.

Fire Fighting Procedures

NO SPEC PROCS. HOWEVER, WETTED PROD PRESENTS SLIP HAZ. PEDESTRIAN & VEHICULAR TRAFFIC MUST PROCEED W/CAUTION WHERE WET PROD MAY EXIST. NIOSH/MSHA APPRVD(SUPDAT)

Unusual Fire/Explosion Hazard

DUST IN SUFFICIENT CONCENTRATION CAN RESULT IN EXPLOSIVE MIXTURE IN AIR. HANDLE TO MINIMIZE DUSTING & ELIMINATE OPEN FLAME & OTHER SOURCES OF IGNIT.

Control Measures

TOP

Respiratory Protection

NIOSH/MSHA APPROVED DUST RESPIRATOR AS REQD TO CONTROL EXPOS. FOLLOW ANSI Z88.2.

Ventilation

PROVIDE MECH VENT TO PVNT DUST CONC, AND TO REDUCE POTNTL EXPOSURE.

Protective Gloves

IMPERVIOUS GLOVES (FP N).

Eye Protection

GOGG (ANSI Z87.1 STD; SFTY (SUPDAT)

Other Protective Equipment

PROVIDE EYEWASH STATION(S). SELECT ADDTNL PROT EQUIP (EG APRON, FACE SHIELD, ETC.), DEPENDING ON CNDTNS OF USE.

Work Hygienic Practices

WASH THORO AFTER HANDLING.

Supplemental Safety and Health

SOL IN H*2O:SOLUBLE-SOLUBILITY LIMITED BY VISCOSITY. FIRE FIGHT PROC:SCBA & FULL PROT EQUIP (FP N). HAZ DECOMP PROD:CHLORIDE VAP. VAP MAY BE IRRITATING/HARMFUL. EYE PROT:GLASSES ALONE DO NOT PROTECT FROM DUST).

Physical/Chemical Properties

TOP

HCC: **NRC/State LIC No:**

Net Prop WT For Ammo:
Boiling Point: **B.P. Text:** N/A

Melt/Freeze Pt: **M.P/F.P Text:** N/K
Decomp Temp: **Decomp Text:** N/K

Vapor Pres: N/A **Vapor Density:** N/A
Volatile Org Content %: **Spec Gravity:** 0.8-1.0

VOC Pounds/Gallon: **PH:** N/A
VOC Grams/Liter: **Viscosity:** N/P

Evaporation Rate & Reference: NOT APPLICABLE
Solubility in Water: SUPP DATA
Appearance and Odor: WHITE FREE FLOWING MICRO BEADS WITH LITTLE OR NO ODOR

Percent Volatiles by Volume: N/A **Corrosion Rate:** N/K

Reactivity Data

TOP

Stability Indicator: YES

Stability Condition To Avoid: NONE SPECIFIED BY MANUFACTURER.
Materials To Avoid: STRONG OXIDANTS SUCH AS LIQUID CHLORINE, ENRICHED GASEOUS/LIQUID OXYG, & SODIUM OR CALCIUM HYPOCHLORITE.

Hazardous Decomposition Products: THERMAL DECOMP/COMBUST MAY PRODUCE OXIDES OF CARBON & NITROGEN, VARIOUS HYDROCARB, AMMONIA AND/OR HYDROGEN (SUPDAT)

Hazardous Polymerization Indicator: NO

Conditions To Avoid Polymerization: NOT RELEVANT.

Toxicological Information TO

Toxicological Information:N/P

Ecological Information TO

Ecological: N/P

MSDS Transport Information TO

Transport Information:N/P

Regulatory Information TO

Sara Title III Information: N/P

Federal Regulatory Information: N/P

State Regulatory Information: N/P

Other Information TO

Other Information: N/P

HMIS HAZCOM Label TOP

Product ID: PERCOL 763

Cage: 4S341 Assigned IND: N

Company Name: ALLIED COLLOIDS INC

Street: UNKNOWN PO Box:

City: SUFFOLK State: VA Zipcode: 23434

Country: US

Health Emergency Phone: 800-424-9300 (CHEMTREC)

Label Required IND: Y
Status Code: C
Label Date: 02/03/1995

Date Of Label Review: 02/03/1995
MFG Label NO:
Year Procured: N/K

Origination Code: G
Eye Protection IND: YES

Chronic Hazard IND: N
Skin Protection IND: YES

Signal Word: CAUTION

Respiratory Protection IND: YES

Health Hazard: Slight
Contact Hazard: Slight

Fire Hazard: None
Reactivity Hazard: None

Hazard And Precautions

ACUTE:CONTACT WITH EYE MAY PRODUCE IRRITATION AND/OR REDNESS. INHALED DUST MAY CAUSE SOME RESPIRATORY IRRITATION. CHRONIC:NONE LISTED BY MANUFACTURER.

POLYACRYLAMIDE

M S D S

Canadian Centre for Occupational Health and Safety
Issue : 2001-1 (February, 2001)

*** IDENTIFICATION ***

MSDS RECORD NUMBER	: 2415914
PRODUCT NAME(S)	: Bio-Phore Polyacrylamide
PRODUCT IDENTIFICATION	: Article number: 1610410
DATE OF MSDS	: 2000-08-17
CURRENCY NOTE	: This MSDS was provided to CCOHS in electronic form on 2000-08-24

*** SUPPLIER/DISTRIBUTOR INFORMATION ***

SUPPLIER/DISTRIBUTOR	: Bio-Rad Laboratories Ltd
ADDRESS	: 5671 McAdam Road Mississauga Ontario Canada L4Z 1N9 Telephone: 905-712-2771 (Information department: Technical services, customer support)
EMERGENCY TELEPHONE NO.	: 905-712-2771

Printing date 08/17/2000 Reviewed on 08/17/2000

1 Identification of substance:

Product details:

Trade name: Bio-Phore Polyacrylamide

Article number: 1610410

Manufacturer/Supplier:
Bio-Rad Laboratories Ltd.
5671 McAdam Road
Mississauga, Ontario L4Z 1N9 1(905)712-2771

Information department: Technical services, customer support.
Emergency information: 1(905)712-2771

2 Composition/Data on components:

Chemical characterization
Description:
Mixture of the substances listed below with nonhazardous additions.

Dangerous components:
7732-18-5 water 50-100 %
EINECS Number: 231-791-2
RTECS: ZC 0110000

25034-58-6 Polyacrylamide-co-methylene-bis-acrylamide 10-20 %
EU Number: 585-580-00-X

3 Hazards identification

Hazard description: not applicable
Information pertaining to particular dangers for man and environment
not applicable
Classification system
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

4 First aid measures

General information No special measures required.
After inhalation
Supply fresh air; consult doctor in case of complaints.
After skin contact Generally the product does not irritate the skin.
After eye contact
Rinse opened eye for several minutes under running water.
After swallowing Induce vomiting and call for medical help.

5 Fire fighting measures

Suitable extinguishing agents
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Protective equipment: No special measures required.

6 Accidental release measures

Person-related safety precautions: Not required.
Measures for environmental protection: No special measures required.
Measures for cleaning/collecting: Ensure adequate ventilation.
Additional information: No dangerous substances are released.

7 Handling and storage

Handling
Information for safe handling:
No special measures required.
Ensure good ventilation/exhaustion at the workplace.
No special precautions are necessary if used correctly.
Information about protection against explosions and fires:
No special measures required.

Storage
Requirements to be met by storerooms and receptacles:
No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.
Storage class
Class according to regulation on flammable liquids: Void

8 Exposure controls and personal protection

Additional information about design of technical systems:
No further data; see item 7.

Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Additional information:
The lists that were valid during the creation were used as basis.

Personal protective equipment
General protective and hygienic measures
The usual precautionary measures should be adhered to when handling chemicals.
Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Protection of hands:
Protective gloves.
Synthetic gloves
Eye protection: Not required.

9 Physical and chemical properties:

Form: Solid.
Colour: Clear
Odour: Odourless

	Value/Range	Unit	Method
Change in condition			
Melting point/Melting range:	undetermined		
Boiling point/Boiling range:	100	C	
Flash point:	Not applicable		
Self igniting:	Product is not selfigniting.		
Danger of explosion: Product does not present an explosion hazard.			
Vapour pressure: at 20 C	23.0	hPa	
Density:	Not determined		
Solubility in / Miscibility with Water:	Fully miscible		
Solvent content:			
Organic solvents:	0.0	%	
Water:	88.0	%	
Solids content:	7.5	%	

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
Dangerous reactions No dangerous reactions known
Dangerous products of decomposition:
No dangerous decomposition products known

11 Toxicological information

Acute toxicity:
Primary irritant effect:
on the skin: No irritant effect.
on the eye: No irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12 Ecological information:

General notes: Not known to be hazardous to water.

13 Disposal considerations

Product:
Recommendation Hand over to hazardous waste disposers.

Uncleaned packagings:
Recommendation:
Disposal must be made according to official regulations.

14 Transport information

Land transport ADR/RID (cross-border)
ADR/RID class: -

Maritime transport IMDG:
IMDG Class: -
Marine pollutant: No

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: -

15 Regulations

Markings according to EU guidelines:
Observe the general safety regulations when handling chemicals
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).

Safety phrases:
60 This material and its container must be disposed of as hazardous waste.

National regulations

Classification according to VbF: Void

16 Other information:

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS: Environmental Health and Safety.
Contact:
Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Juliet Carrara, 4000 Alfred Nobel Drive, Hercules,
California, 94547: 1(510) 724-7000

POLYETHYLENE GLYCOL

* *
* M S D S *
* *
* Canadian Centre for Occupational Health and Safety *
* * * * * * * * * * * * * Issue : 2001-1 (February, 2001) *

*** IDENTIFICATION ***

MSDS RECORD NUMBER : 2453790
PRODUCT NAME(S) : POLYETHYLENE GLYCOL
PRODUCT IDENTIFICATION : MSDS NUMBER: P5029
PRODUCT CODE: U204, U214, U215, U216, U218, U220, U221, U222, 7755, E922, H273
C.A.S. NUMBER: 25322-68-3
DATE OF MSDS : 1999-11-17
CURRENCY NOTE : This MSDS was provided to CCOHS in electronic form on 2000-11-14

*** MANUFACTURER INFORMATION ***

MANUFACTURER : Mallinckrodt Baker, Inc
ADDRESS : 222 RED SCHOOL LANE
PHILLIPSBURG NEW JERSEY
U.S.A. 08865
Telephone: 800-582-2537 (Customer Service)
EMERGENCY TELEPHONE NO. : 908-859-2151
800-424-9300 (CHEMTREC, USA)
703-527-3887 (Outside USA & CANADA)
613-996-6666 (CANUTEC)

*** MATERIAL SAFETY DATA ***

Effective Date: 11/17/99
Supercedes: 12/08/96

MSDS MATERIAL SAFETY DATA SHEET

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Emergency Telephone Number: 908-859-2151

CHEMTREC: 800-424-9300 (USA)
703-527-3887
(Outside USA & CANADA)
CANUTEC: 613-996-6666

NOTE: Use CHEMTREC and CANUTEC phone numbers only in the event of a chemical emergency.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

M A L L I N C K R O D T J. T. B A K E R

POLYETHYLENE GLYCOL

1. Product Identification

Synonyms:	PEG; Carbowax(R); Polyglycol; Polyethylene glycol 200, 300, 400, 600,1000,1450, 3350, 4000, 6000, 8000 and 20000.
CAS No:	25322-68-3
Molecular Weight:	Not applicable to mixtures.
Chemical Formula:	(C2H4O) n.H2O
Product Codes:	J.T. Baker: U204, U214, U215, U216, U218, U220, U221, U222 Mallinckrodt: 7755, E922, H273

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Polyethylene Glycol	25322-68-3	90 - 100%	No

3. Hazards Identification

Emergency Overview

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating:	0 - None
Flammability Rating:	1 - Slight
Reactivity Rating:	0 - None
Contact Rating:	1 - Slight
Lab Protective Equip:	GOGGLES; LAB COAT
Storage Color Code:	Orange (General Storage)

Potential Health Effects

Inhalation:

No adverse health effects expected from inhalation. (May be a mechanical irritant.)

Ingestion:
Large doses of the lower molecular weight products may cause gastro-intestinal upset.

Skin Contact:
No adverse effects expected.

Eye Contact:
No adverse effects expected.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
Damaged skin.

4. First Aid Measures

Inhalation:
Not expected to require first aid measures.

Ingestion:
If large amounts were swallowed, give water to drink and get medical advice.

Skin Contact:
In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation develops or persists.

Eye Contact:
In case of contact, flush eyes with plenty of water for at least 15 minutes. Get medical advice if irritation develops.

5. Fire Fighting Measures

Fire:
As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. (increases as molecular weight increases). Flash point: 182 - 287 C.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8.

Solid Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

Liquid Spills: Absorb with vermiculite, dry sand, earth or similar material and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids, vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
AIHA Workplace Environmental Exposure Level (WEEL):
10 mg/m3, 8-hour, TWA

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved):
For use with solids (not required for liquids): If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear liquid or white solid.

Odor:
Mild odor.

Solubility:
Soluble in water.

Density:
range: 1.1 to 1.2 (increases as molecular weight increases)

pH:
No information found.

% Volatiles by volume @ 21C (70F):
No information found.

Boiling Point:
No information found.

Melting Point:
Melting point increases as molecular weight increases:
PEG 400 = 4-8C (39-46F)
PEG 600 = 20-25C (68-77F)
PEG1500 = 44-48C (111-118F)
PEG 4000 = 54-58C (129-136F)
PEG 6000 = 56-63C (133-145F)

Vapor Density (Air=1):
No information found.

Vapor Pressure (mm Hg):
Vapor pressure is very low; as molecular weight increases, vapor pressure decreases.

Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Incompatible with polymerization catalysts (peroxides, persulfates) and accelerators, strong oxidizers, strong bases and strong acids.

Conditions to Avoid:
Incompatibles.

11. Toxicological Information

Oral Rat LD50 for:
PEG 200 = 28gm/kg; PEG 300 = 27.5gm/kg; PEG 400 = 30.2gm/kg; PEG 600 = 30gm/kg; PEG 1000 = 32gm/kg; PEG 1450 = > 4gm/kg; PEG 4000 = 50gm/kg; PEG 6000 = > 50gm/kg; PEG 20000 = 31.6gm/kg
Polyethylene glycol has been investigated as a mutagen; PEG 1000 has been investigated as a tumorigen.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Polyethylene Glycol (25322-68-3)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.

Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------

Ingredient	TSCA	EC	Japan	Australia
Polyethylene Glycol (25322-68-3)	Yes	No	Yes	Yes

--------\Chemical Inventory Status - Part 2\--------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Polyethylene Glycol (25322-68-3)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\--------

Ingredient	-SARA 302- RQ	TPQ	List	------SARA 313------ Chemical Catg.
Polyethylene Glycol (25322-68-3)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\--------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Polyethylene Glycol (25322-68-3)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: No Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)
Australian Hazchem Code: No information found.
Australian Poison Schedule: No information found.

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings:
Health: 0 Flammability: 1 Reactivity: 0

Label Hazard Warning:
As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

Label Precautions:
None.

Label First Aid:
Not applicable.

Product Use:
Laboratory Reagent.

Revision Information:
No changes.

Disclaimer:

Prepared by: Strategic Services Division
Phone Number: (314) 654-1600 (U.S.A.)

P5029

PROPANE

M S D S

Canadian Centre for Occupational Health and Safety

Issue : 2001-1 (February, 2001)

*** IDENTIFICATION ***

MSDS RECORD NUMBER : 1434217
PRODUCT NAME(S) : H - D 5 PROPANE
DATE OF MSDS : 1997-02-18

*** MANUFACTURER INFORMATION ***

MANUFACTURER : IRVING OIL LIMITED
ADDRESS : Post Office Box 1421
Saint John New Brunswick
Canada E2L 4K1
Telephone: 506-632-2000
EMERGENCY TELEPHONE NO. : 506-648-3060

***

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*** SUPPLIER/DISTRIBUTOR INFORMATION ***

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Saint John New Brunswick
Canada E2L 4K1
Telephone: 506-632-2000
EMERGENCY TELEPHONE NO. : 506-648-3060

*** MATERIAL SAFETY DATA ***

PROPANE

MATERIAL SAFETY DATA SHEET

1. PRODUCT INFORMATION

PRODUCT IDENTIFIER		IRVING PRODUCT CODE
H - D 5 PROPANE		
WHMIS Classification	CLASS A - COMPRESSED GAS CLASS B, DIVISION 1: FLAMMABLE GAS	Application and Use AUTOMOTIVE OR SPACE HEATER FUEL

2. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State
Gas [X] Liquid [X] Solid [ ]

Odour and Appearance	COLOURLESS & ODORLESS WITHOUT MORCEPTON ADD
Odour Threshold (p.p.m.)	4800
Specific Gravity	.500 @ 15 deg C
Vapour Pressure (mm)	954 KPA @ 29.0 C
Vapour Density (Air = 1)	1.6
Evaporation Rate	RAPID
Boiling Point (deg C)	-40 C
Freezing Point (deg C)	-190 C
Solubility in Water (20 deg C)	6.1
% Volatile (by volume)	NOT AVAILABLE
pH	NOT AVAILABLE
Density (g/cm3)	.5
Coefficient of water/oil dist.	NOT AVAILABLE

3. HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Approximate Concentration %	C.A.S. N.A. or U.N. Numbers
PROPANE	95-98%	74-98-6
LD50 Specify Species and Route: NOT AVAILABLE		
LC50 Specify Species and Route: NOT AVAILABLE		
ETHANE	3-5%	74-84-0
LD50 Specify Species and Route: NOT AVAILABLE		
LC50 Specify Species and Route: NOT AVAILABLE		
BUTANE	1-3%	79-10-68
LD50 Specify Species and Route: NOT AVAILABLE		
LC50 Specify Species and Route: NOT AVAILABLE		
ISO-BUTANE	0.1-0.3%	75-28-5
LD50 Specify Species and Route: NOT AVAILABLE		
LC50 Specify Species and Route: NOT AVAILABLE		

PROPANE

METHANE 0.1-0.2% 74-82-8
LD50 Specify Species and Route: NOT AVAILABLE
LC50 Specify Species and Route: NOT AVAILABLE

4. HEALTH HAZARD INFORMATION

ROUTE OF ENTRY
SKIN CONTACT [X] SKIN ABSORPTION [ ] EYE CONTACT [X]
INHALATION [X] INGESTION [ ]
EFFECTS OF ACUTE EXPOSURE TO PRODUCT
HIGH CONCENTRATIONS CAN CAUSE OXYGEN DEFICIENCY BY DISPLACING AIR AND CAUSE RAPID BREATHING, FATIGUE, INCOORDINATION, EXCESSIVE SALIVATION, HEADACHE, NAUSEA, VOMITING AND DISORIENTATION.
EFFECTS OF CHRONIC EXPOSURE TO PRODUCT
IF NOT REMOVED MAY CAUSE CONVULSIONS LOSS OF CONSCIOUSNESS AND DEATH. 10 MINUTES TO 10,000 PPM HAS PRODUCED DROWSINESS.
REPRODUCTIVE TOXICITY
NOT AVAILABLE
EXPOSURE LIMITS
1000 PPM FOR DAILY 8 HR EXPOSURE
IRRITANCY OF PRODUCT
MINOR SKIN AND EYE (GAS) (LIQUID) - EYE INJURY, FROST BITE, RESPIRATORY PROBLEMS
SENSITIZATION TO PRODUCT
NOT AVAILABLE
CARCINOGENICITY
NOT AVAILABLE
TERATOGENICITY
NOT AVAILABLE
MUTAGENICITY
NOT AVAILABLE
SYNERGISTIC PRODUCTS
NOT AVAILABLE

5. FIRE AND EXPLOSION HAZARD

FLAMMABILITY YES [X] NO [ ]
IF YES, UNDER WHICH CONDITIONS?
LIQUID EVAPORATES AND FORMS FUMES, WHICH CAN EXPLODE OR BURN QUICKLY IF IGNITED.

MEANS OF EXTINCTION which conditions
STOPFLOW - CO2 OR DRY CHEMICAL WATER FOG PRODUCED BY SPECIAL NOZZLE IS EFFECTIVE BUT REQUIRES EXPERIENCE.
SPECIAL PROCEDURES
DO NOT ENTER ANY ENCLOSED OR CONFINED SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT INCLUDE SELF - CONTAINED BREATHING APPARATUS.
FLASHPOINT (DEG C) AND METHOD
-140 deg C