

PHOTOGRAPHERS' FORMULARY INC.

P.O. Box 950 • Condon MT 59826 • 800-922-5255 • FAX 406-754-2896

THE PYROCAT-MC IN GLYCOL DEVELOPER

CAT. NUMBER 01-5095 LIQUID TO MAKE 10 LITERS

CAT. NUMBER 01-5096 LIQUID TO MAKE 50 LITERS
OF WORKING SOLUTION

Pyrocat-MC in glycol is a high acutance developer formulated by Sandy King as an alternative to other pyrogallol based staining developers. Pyrocat-MC gives negatives of fine grain and full emulsion speed and is suitable for all types of development methods, including rotary, normal agitation, minimal agitation and stand development. Pyrocat-MC is slightly more energetic (faster working) than Pyrocat-HD and gives very low general stain (Base+Fog) with very long development times, making it ideal when developing negatives to the high CI needed for printing with alternative processes.

FOR YOUR CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read the warnings listed here. Always use rubber gloves and dust mask when using chemicals.

Catechol (pyrocatechin) has a high vapor pressure and it is a phenol. The high vapor pressure means that solid catechol evaporates readily. When you open a bottle containing solid catechol, you can smell it. Always store the solid catechol in a tightly capped glass container. When mixing a solution containing catechol, work in a ventilated area. When catechol is in solution, its high vapor pressure is not a problem.

The fact that catechol is a phenol means that it is corrosive and can cause skin burns. If you should spill a solution of catechol, wash the area (or skin) with soap and water. Use tongs or rubber gloves whenever possible when working with this compound or its solutions.

The user assumes all risks upon accepting these chemicals. IF FOR ANY REASON YOU DO NOT WISH TO ASSUME ALL RISKS, PLEASE RETURN THE CHEMICALS WITHIN 30 DAYS FOR A FULL REFUND.

Please consult with local sewer and water authorities regarding proper disposal of darkroom chemicals in your area.

Pyrocat-MC Film Developer

Stock Solution A

Distilled Water (68°F)	5 ml	10 ml
Triethanolamine (TEA)	0.8 g	4.0 g
Metol	0.25 g	1.25 g
Ascorbic Acid	0.4 g	2.0 g
Pyrocatechin	5.0 g	25.0 g
Propylene Glycol to make (68°F)	100 ml	500 ml

Stock Solution B

Distilled Water (68°F)	75 ml	375 ml
Potassium Carbonate	75 g	375 g
Water to make (68°F)	100 ml	500 ml

Working Solution

To make a standard working solution mix 1 part A with 1 part B with 100 parts water.

The working solution can be made quite a bit more energetic (faster working) by using a dilution of 3:2:100 or 5:3:100. The stronger dilutions would generally be used only when developing negatives for printing with alternative processes, which require negatives of much greater contrast than silver papers.

One major difference between PMK and Pyrocat-MC is the color of the stain. PMK stain has a strong yellow/green color, which inhibits blue and magenta. When printing on graded paper, the yellow/green stain essentially adds more density to the negative and boosts the contrast. When printing on variable contrast paper, the yellow/green stain tends to reduce contrast, particularly in the high values. These effects can be good or bad, depending on the negative. Pyrocat-MC's stain is brown in color. Pyrocat negatives print much like PMK negatives on VC papers, though with slightly less highlight shouldering. Pyrocat-MC negatives print faster on graded papers than similar PMK negatives because brown stain doesn't inhibit the blue light that the paper is sensitive to as much as yellow/green stain.

Use a plain water stop bath for one minute or an acetic stop bath at one-half normal strength. Use an alkaline fixer (such as TF-4) for 3-4 minutes; use a standard rapid fix without hardener for 5 minutes. Wash in running water for 10-15 minutes.

10-1463

6/7/2006

REPORT NUMBER: 703

UNIVAR USA INC.

PAGE: 001

MSDS NO: DZ87719

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 08/31/05

VERSION: 005

PRODUCT: TRIETHANOLAMINE 85%

ORDER NO: 241978

PROD NO : 370311

PHOTOGRAPHERS FORMULARY
CALL IN ADVANCE TO MEET
7079 HWY 83 N.
BOX 89
CONDON ,MT 59826

UNIVAR USA INC.

6100 CARILLON POINT

, KIRKLAND

(425)889-3400

, WA 98033

----- EMERGENCY ASSISTANCE -----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

PRODUCT NAME: TRIETHANOLAMINE 85%

MSDS NUMBER: DZ87719

DATE ISSUED: 9/3/2004

SUPERSEDES: 2/21/2000

ISSUED BY: 008360

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 IDENTIFICATION

Product Name / TRIETHANOLAMINE 85% Commercial Grade

1.2 COMPANY IDENTIFICATION

Distributed by:

Univar USA Inc.

6100 Carillon Point

Kirkland, WA 98003-7357

425-889-5000

2. COMPOSITION INFORMATION

Component	CAS #	Amount (%W/W)
Triethanolamine	102-71-6	>= 85 <= 89%
N,N-Diethanolamine	111-42-2	>= 11 <= 15%

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3. HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Appearance Transparent colorless to pale amber

Physical State Liquid

Odor Mild ammoniacal

Hazards of product **WARNING!**

HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. HARMFUL IF SWALLOWED.

CAUSES EYE AND SKIN IRRITATION.

REPEATED EXPOSURE MAY CAUSE LIVER AND KIDNEY DAMAGE.

3.2 POTENTIAL HEALTH EFFECTS

Effects of Single Acute Overexposure

Inhalation Vapor or mist from heated material may cause irritation of the respiratory tract, experienced as nasal discomfort and discharge, with chest pain and coughing.

Eye Contact Causes moderate to severe irritation, experienced as discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of the conjunctiva. Causes corneal injury.

Skin Contact Brief contact may cause slight irritation with itching and local redness. Prolonged contact may cause more severe irritation, with discomfort or pain, local redness and swelling, and possible tissue destruction.

Skin Absorption Prolonged or widespread contact may result in the absorption of potentially harmful amounts of material.

Swallowing Moderately toxic. May cause burning or painful sensations in the mouth, throat, chest, and abdomen, nausea, vomiting, and diarrhea. May cause dizziness, drowsiness, faintness, weakness, collapse, and coma.

Chronic, Prolonged or Repeated Overexposure

Effects of Repeated Overexposure Repeated overexposure may cause damage to kidneys and liver.

Other Effects of Overexposure Skin contact may cause sensitization and an allergic skin reaction in a small proportion of individuals.

Medical Conditions Aggravated by Exposure

Skin contact may aggravate an existing dermatitis. Inhalation of material may aggravate asthma and inflammatory or fibrotic pulmonary disease.

See Section 11 for toxicological information and additional information about potential health effects.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS See Section 12 for Ecological Information.

4. FIRST AID PROCEDURES

4.1 INHALATION

Remove to fresh air.

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4.2 EYE CONTACT

Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

4.3 SKIN CONTACT

Remove contaminated clothing. Wash skin with soap and water. Obtain medical attention if contact has been widespread and prolonged, or if irritation persists. Wash clothing before reuse.

4.4 SWALLOWING

If patient is fully conscious, give two glasses of water. Induce vomiting. This should be done only by medical or experienced first-aid personnel. Obtain medical attention.

4.5 NOTES TO PHYSICIAN

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. The hazards of this material are due mainly to its severely irritant properties on skin and mucosal surfaces.

5. FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES - REFER TO SECTION 9, PHYSICAL AND CHEMICAL PROPERTIES

5.2 EXTINGUISHING MEDIA

Extinguish fires with water spray or apply alcohol-type or all-purpose-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

5.3 FIRE FIGHTING PROCEDURES

Do not direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.

5.4 SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Use self-contained breathing apparatus, eye protection, and protective clothing.

5.5 UNUSUAL FIRE AND EXPLOSION HAZARDS

During fire, oxides of nitrogen may be evolved. See Section 8.3 - Engineering Controls

5.6 HAZARDOUS COMBUSTION PRODUCTS

Burning can produce the following products: Oxides of carbon and nitrogen. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

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6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled: Collect for disposal.
 Personal Precautions: Wear suitable protective equipment. Avoid contact with eyes and skin. See Section 8.2 - Personal Protection.

7. HANDLING AND STORAGE**7.1 HANDLING**

General Handling

Avoid breathing vapor.

Do not get in eyes, on skin, on clothing. Do not swallow.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

FOR INDUSTRY USE ONLY. Ventilation

General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment. Special local ventilation is needed at points where vapors can be expected to escape to the workplace air.

Other Precautions

Do not add nitrites or other nitrosating agents. A nitrosamine, which may cause cancer, may be formed. For drug applications,

7.2 STORAGE

May segregate or freeze below 16 deg C (60 deg F). Thaw and mix before sampling or using.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**8.1 EXPOSURE LIMITS**

Component	Exposure Limits	Skin. Form
Triethanolamine	5 mg/m3 TWAB ACGIH	
N,N-Diethanolamine	2 mg/m3 TWAB ACGIH	Yes

In the Exposure Limits Chart above, if there is no specific qualifier (La, Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A "Yes" in the Skin Column indicates a potential significant contribution to overall exposure by the cutaneous (skin) route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance. A "Blank" in the Skin Column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

8.2 PERSONAL PROTECTION

Respiratory Protection: Use self-contained breathing apparatus in high vapor concentrations.

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Ventilation: General (mechanical) room ventilation is expected to be Satisfactory where this product is stored and handled in closed equipment. Special local ventilation is needed at points where vapors can be expected To escape to the workplace air.

Eye Protection: Monogoggles

Protective Gloves: Butyl

Polyvinyl chloride coated

Other Protective Equipment: Eye bath, safety shower, and chemical apron.

8.3 ENGINEERING CONTROLS

PROCESS HAZARD: Sudden release of hot organic chemical vapor or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into hot equipment under a vacuum, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapor."

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Appearance: Transparent colorless to pale amber

Odor: Mild ammoniacal

Flash Point - Closed Cup: 194.4 deg C 382 deg F Pensky-Martens Closed Cup ASTM D 93

Flash Point - Open Cup: 190.5 deg C 375 deg F Cleveland Open Cup ASTM D 92

Flammable Limits In Air:

Lower Not determined.

Upper Not determined.

Autoignition Temperature: Not currently available.

Vapor Pressure: < 0.01 mmHg 20 deg C

Boiling Point (760 mmHg): 310.3 deg C 590.5 deg F Extrapolated with decomposition

Vapor Density (air = 1): 4.9

Specific Gravity (H2O = 1): 1.126 20 deg C/20 deg C

Freezing Point: 15.8 deg C 60.4 deg F

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Melting Point: Not applicable.

Solubility in Water (by weight): 100 % 20 deg C

pH: Not currently available.

Evaporation Rate (Butyl Acetate = 1): < 0.01

Percent Volatiles: 0.25 Wt%

10. STABILITY AND REACTIVITY

10.1 STABILITY/INSTABILITY Stable.

Conditions to Avoid: Temperatures above 250 degrees C. May undergo self-sustaining thermal decomposition.

Incompatible Materials: Strong oxidizing agents. Strong bases. Strong acids. Aldehydes. Ketones. Acrylates. Organic anhydrides. Organic halides.

10.2 HAZARDOUS POLYMERIZATION Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Peroral

Rat; female; LD50 = 4.92 (3.58 - 6.78) ml/kg

Major Signs: sluggishness, lacrimation, piloerection, unsteady gait, diarrhea, and red or brown discharge on perinasal and perigenital fur

Gross Pathology: discolored lungs, stomach, intestines. Clear to dark red liquid in stomach and intestine

Peroral

Rat; male; LD50 = 8.57 (5.80 - 12.7) ml/kg

Major Signs: sluggishness, lacrimation, piloerection, unsteady gait, diarrhea, and red or brown discharge on perinasal and perigenital fur

Gross Pathology: discolored lungs, stomach, intestines. Clear to dark red liquid in stomach and intestine

Percutaneous

Rabbit; female = 16 ml/kg; 24 h occluded.

Mortality: 0/5

Major Signs: sluggishness, unsteady gait, emaciation

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Gross Pathology: discolored lungs, thymus, spleen, kidneys; stomach and intestines gas-and/or liquid-filled

Percutaneous

Rabbit; male = 16 ml/kg; 24 h occluded.

Mortality: 0/5

Major Signs: sluggishness, unsteady gait, emaciation

Gross Pathology: discolored lungs, thymus, spleen, kidneys; stomach and intestines gas-and/or liquid-filled

Inhalation

static generation Rat; female; 6 h; 25 deg C.

Mortality: 0/5

Major Signs: None. Gross Pathology: None.

Inhalation

static generation Rat; male; 6 h; 25 deg C.

Mortality: 0/5

Major Signs: None. Gross Pathology: None.

SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMANS

There are reports that ingestion of diethanolamine (DEA) produced nervous system injury in dogs and rats. Heart and salivary gland lesions have also been observed in mice treated with DEA cutaneously and in drinking water. Rats given high doses of DEA developed anemia and testicular lesions. An increased incidence of some skeletal variations suggestive of a slight developmental delay was seen only in the fetuses of rats given 1500 mg/kg/day cutaneously which also caused significant maternal toxicity. However, no fetal malformations were observed in either rats or rabbits similarly treated. The National Toxicology Program has concluded that there is clear evidence of liver tumor and some evidence of kidney tumor in mice dermally exposed for their lifetime to DEA. The significance of these findings and their relevance to humans are not clear as DEA was not genotoxic (neither mutagenic nor clastogenic), and did not induce tumors in rats or in transgenic mice similarly treated. Additional research to better understand the significance of these observations to humans, if any, is underway.

Recent analyses of Diethanolamine and Triethanolamine for N-nitrosodiethanolamine have not revealed its presence at the detection limit of the test (20ppb). However, amines may react with nitrites or other nitrosating agents to form nitrosamines. Some nitrosamines have been shown

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to be carcinogenic in laboratory animals.

12. ECOLOGICAL INFORMATION 12.1 ENVIRONMENTAL FATE

BOD (% Oxygen consumption)

Day 5	Day 10	Day 15	Day 20	Day 28/30
2%	9%		49%	

12.2 ECOTOXICITY

Toxicity to Micro-organisms

Bacterial/NA; 16 h; IC50

Result value: > 5000 mg/L

Toxicity to Aquatic Invertebrates

Daphnia; 48 h; LC50

Result value: 739 (659 - 828) mg/L

Toxicity to Fish

Fathead Minnow; 96 h; LC50

Result value: 2348 (2064 - 2671) mg/L

12.3 FURTHER INFORMATION

Chemical Oxygen Demand (COD) - measured: 1.65 mg/mg

Chemical Oxygen Demand (COD) - calculated: 1.61 mg/mg

13. DISPOSAL CONSIDERATIONS

13.1 DISPOSAL

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. VENDOR 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 AS DESCRIBED IN MSDS SECTION 2 (Composition/ Information on Ingredients). FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION 14.1 U.S. D.O.T.

NON-BULK

Proper Shipping Name : NOT REGULATED

BULK

Proper Shipping Name : OTHER REGULATED SUBSTANCES, LIQUID, NOS

Technical Name : CONTAINS DIETHANOLAMINE Hazard Class : 9

ID Number : NA3082

Packing Group : PG III

PRODUCT: TRIETHANOLAMINE 85X

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Reportable Quantity : 770 LB

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION 15.1 FEDERAL/NATIONAL
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF
1980 (CERCLA SECTION 103)

This product contains the following substances which are subject to CERCLA
Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
N,N-Diethanolamine	111-42-2	(= 15.0000%

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY
PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986) SECTION 302

This product contains the following substances which are subject to SARA
Section 302 reporting requirements and which are listed in 40 CFR 302.4.
None.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY
PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986) SECTION 313

This product contains the following substances which are subject to the
reporting requirements of Section 313 of Title III of the Superfund
Amendments and Reauthorization Act 1986 and which are listed in 40 CFR Part
372.

Component	CAS #	Amount
N,N-Diethanolamine	111-42-2	(= 15.0000%

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY
PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986) SECTIONS 311 AND 312

Delayed (Chronic) Health Hazard : Yes
Fire Hazard : No
Immediate (Acute) Health Hazard : Yes
Reactive Hazard : Yes
Sudden Release of Pressure Hazard : No

TOXIC SUBSTANCES CONTROL ACT (TSCA)

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All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS)

The components of this product are on the EINECS inventory or are exempt from EINECS inventory requirements.

CEPA - DOMESTIC SUBSTANCES LIST (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

15.2 STATE/LOCAL

PENNSYLVANIA (WORKER AND COMMUNITY RIGHT-TO-KNOW ACT)

The following product components are cited in the Pennsylvania Hazardous Substances List, the Pennsylvania Special Hazardous Substance List, and/or the Pennsylvania Environmental Hazardous Substance list, and are present at levels which require reporting.

Component	CAS #	Amount
Triethanolamine	102-71-6	<= 89.0000%
N,N-Diethanolamine	111-42-2	<= 15.0000%

CALIFORNIA PROPOSITION 65 (SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

CALIFORNIA SCAQMD RULE 443.1 (SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 443.1, LABELING OF MATERIALS CONTAINING ORGANIC SOLVENTS)

VOC: Vapor pressure <0.01 mmHg at 20 deg C 170 g/l VOC
170 g/l of material less water and less exempted solvents.

This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

16. OTHER INFORMATION

16.2 HAZARD RATING SYSTEM

NFPA ratings for this product are: H - 2 F - 1 R - 1

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These ratings are part of a specific hazard communication program and should be disregarded where individuals are not trained in the use of this hazard rating system. You should be familiar with the hazard communication programs applicable to your workplace.

16.3 RECOMMENDED USES AND RESTRICTIONS FOR INDUSTRY USE ONLY

16.4 REVISION

Version: 3.0

Revision: 09/03/2004

16.5 LEGEND

Bacterial/NA Non Acclimated Bacteria

F Fire

H Health

IHG Industrial Hygiene Guideline

N/A Not available

NFPA National Fire Protection Association

O Oxidizer

R Reactivity

TS Trade secret

VOL/VOL Volume/Volume

W Water Reactive

W/W Weight/Weight

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----- FOR ADDITIONAL INFORMATION -----

CONTACT: MSDS COORDINATOR UNIVAR USA INC.
DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400

06/06/06 14:37 PRODUCT: 370311 CUST NO: 113365 ORDER NO: 241978

----- NOTICE -----

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PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED

HEREIN, AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR

CONSEQUENTIAL DAMAGES. **

DO NOT USE INGREDIENT INFORMATION AND/OR PERCENTAGES IN THIS MSDS AS A
PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT
SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM
YOUR LOCAL UNIVAR SALES OFFICE.

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE
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ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO
DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY
ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM
THE PUBLICATION OR USE OF, OR RELIANCE UPON , INFORMATION CONTAINED HEREIN.
THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT
RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER
PROCESS.

*** END OF MSDS ***

10-0710

MATERIAL SAFETY DATA SHEET (M. S. D. S.)

SECTION – I, CHEMICAL IDENTIFICATION

NAME OF PRODUCT : METOL (p-METHYL AMINOPHENOL SULPHATE)
CHEMICAL FORMULA : $\text{HOC}_6\text{H}_4\text{NHCH}_3 \frac{1}{2} \text{H}_2\text{SO}_4$
CAS NO. : 55-55-0

SECTION – II, HAZARDS IDENTIFICATION

- TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
- IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
- IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
- IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
- WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

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SECTION – III, FIRST-AID MEASURES

- IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY AMOUNTS OF WATER FOR AT LEAST 15 MINUTES.
- IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER.
- IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
- IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.
- WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION – IV, FIRE FIGHTING MEASURES

- EXTINGUISHING MEDIA
WATER SPRAY.
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.
- SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
- UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

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SECTION – V, ACCIDENTAL RELEASE MEASURES

- WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
- SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
- VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION – VI, SAFE HANDLING / PERSONAL PROTECTION

- WEAR APPROPRIATE RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES.
- SAFETY SHOWER AND EYE BATH.
- USE ONLY IN A CHEMICAL FUME HOOD.
- DO NOT BREATH DUST.
- AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
- AVOID PROLONGED OR REPEATED EXPOSURE.
- WASH THOROUGHLY AFTER HANDLING.
- TOXIC.
- IRRITANT.
- POSSIBLE SENSITIZER.
- KEEP TIGHTLY CLOSED.
- PROTECT FROM LIGHT.

SECTION – VII, PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR : WHITE CRYSTALS, ODORLESS
PHYSICAL PROPERTIES
MELTING POINT : 260⁰ C (DEC)
AUTOIGNITION TEMPERATURE : 531⁰ C

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SECTION –VIII, STABILITY AND REACTIVITY

- INCOMPATIBILITIES
ACIDS
ACIDS CHLORIDES
ACID ANHYDRIDES
OXIDIZING AGENTS
SENSITIVE TO LIGHT

- HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

THERMAL DECOMPOSITION MAY PRODUCE CARBON MONOXIDE, CARBON DIOXIDE, AND NITROGEN OXIDES.
SULFUR OXIDES.

SECTION –IX, TOXICOLOGICAL INFORMATION

ACUTE EFFECTS

- HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN.
- CAUSES EYE AND SKIN IRRITATION.
- MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
- PROLONGED OR REPEATED EXPOSURE MAY CAUSE ALLERGIC REACTIONS IN CERTAIN SENSITIVE INDIVIDUALS.
- TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

SECTION –X, OTHER INFORMATION

The information submitted is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processor from the responsibility of carrying out their own tests and experiments, neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.

REPORT NUMBER: 703

UNIVAR USA INC.

PAGE: 001

MSDS NO: P1349VS

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 10/31/97

VERSION: 004

PRODUCT: ASCORBIC ACID, VITAMIN C

ORDER NO: 209212

PROD NO : 720201

PHOTOGRAPHERS FORMULARY
CALL IN ADVANCE TO MEET
7079 HWY 83 N,
BOX 89
CONDON ,MT 59826

UNIVAR USA INC.
6100 CARILLON POINT , KIRKLAND

(425)889-3400
, WA 98033

----- EMERGENCY ASSISTANCE -----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

PRODUCT IDENTIFICATION

PRODUCT NAME: ASCORBIC ACID, VITAMIN C

MSDS #: P1349VS

DATE ISSUED: 9/26/97

SUPERSEDES: 1/18/96

ISSUED BY: 005301

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical Name: Ascorbic Acid, Vitamin C .
Trade Name: Ascorbic Acid, Vitamin C USP-FCC .
Chemical Family: Organic
Formula: C₆H₈O₆
Molecular Weight: 176.12 g/mol

2. COMPOSITION / INFORMATION ON INGREDIENTS

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Component	CAS #	Appr %
Ascorbic Acid	50-81-7	>99%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Not available.
 See product label for specific hazard warnings.
 See MSDS Section 3 - "Symptoms of Exposure" for health hazard information.

Appearance: White powder to crystals

POTENTIAL HEALTH EFFECTS (ACUTE AND CHRONIC)

Symptoms of Exposure:

Eyes: May cause irritation on contact with the eyes.

Skin: May cause irritation on contact with the skin.

Inhalation: Expected to cause general respiratory tract irritation after inhalation of dust.

Ingestion: Material is virtually non-toxic.

Special Cond. Aggravated by Exposure: None known.

Routes of Entry:

Eye and skin contact and inhalation are anticipated as possible routes of exposure. Ingestion is not expected

Mutagenicity:

This material is not known to cause cancer in humans or animals.

4. FIRST AID MEASURES

Emergency First Aid:

Eyes: Flush with copious amounts of water for fifteen minutes. Get medical attention if symptoms persist.

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Skin: Remove excess material and wash affected skin with soap and water.
Gently dry area with a clean towel.

Inhalation: Remove to uncontaminated area. If not breathing give artificial
respiration. If breathing is difficult, give oxygen.

Ingestion: Induce vomiting if conscious and as directed by a physician.
Never give anything by mouth to an unconscious person. Get medical attention.

Notes EMS:

Emergency treatment information is not available for this product.

5. FIRE FIGHTING MEASURES

Flash Point (F): Not ignitable. Flash point not applicable.

Flammable Limits LEL (%): Not applicable.

Flammable Limits UEL (%): Not applicable.

Auto Ign: Not applicable.

Extinguishing Media:

Flood with water or use carbon dioxide, foam, or dry chemical.

Fire Fighting Procedures:

Positive pressure self-contained breathing apparatus and structural
firefighters' protective clothing as required for other materials
present.

Fire & Explosion Hazards:

Irritating or toxic gases, fumes, smoke, or particulates. Unusual fire or
explosion hazards are not expected. Relative hazard is anticipated to be the
same as normal combustible materials.

6. ACCIDENTAL RELEASE MEASURES

Spill Response:

Evacuate the area of all unnecessary personnel.

Wear suitable protective equipment listed under Exposure / Personal
Protection.

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Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards.

Maintain the release and eliminate its source, if this can be done without risk.

Make up and containerize for proper disposal as described under Disposal.

Comply with Federal, State, and local regulations on reporting releases.

Refer to Regulatory Information for reportable quantity and other regulatory data.

7. HANDLING AND STORAGE

Handling & Storage:

Keep container tightly closed. Store in general chemical storage. Protect against physical damage. Handle carefully. Store away from incompatible materials. Avoid generating dust or vapors.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT:

ventilation, Respiratory Protection, Protective Clothing, Eye Protection
Safety goggles or safety glasses with side shields are required.

Provide adequate general mechanical ventilation and local exhaust ventilation.

Work / Hygienic Practices:

When handling quantities of material, be sure to wear appropriate protective equipment as described. Respirators must be worn when Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV) is exceeded. Eye wash and safety shower should be readily available.

Wash thoroughly after handling. Do not take internally. Avoid breathing dust or vapor when generated.

Mechanical ventilation of work areas should be provided where the material is being used.

EXPOSURE GUIDELINES

HA - PEL:

PRODUCT: ASCORBIC ACID, VITAMIN C

ORDER NO: 209212

PROD NO : 720201

Component	TWA		STEL		CL		Skin
	PPM	MG/M3	PPM	MG/M3	PPM	MG/M3	
Ascorbic Acid							

ACGIH - TLV:

Component	TWA		STEL		CL		Skin
	PPM	MG/M3	PPM	MG/M3	PPM	MG/M3	
Ascorbic acid							

 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (C 760 mmHg): Not applicable
 Melting Point (C): 192 C
 Specific Gravity (H2O = 1): not applicable
 Bulk Density: N/A
 Vapor Pressure (mm Hg): Not applicable.
 Percent Volatile by Vol (%): <1% (volume)
 Vapor Density (Air = 1): N/A
 Evaporation Rate (BuAc = 1): Not applicable.
 pH Aqueous Solution: Not determined
 Solubility in Water (%): Soluble
 Appearance: White powder to crystals

 10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions of storage or use.

Hazardous Polymerization:
 Will not occur under normal conditions of storage or use.

Hazardous Decomposition:
 Not determined

Conditions To Avoid:
 NA

Materials To Avoid:

- () Water
- (X) Acids
- (X) Bases
- () Corrosives
- (X) Oxidizers

PRODUCT: ASCORBIC ACID, VITAMIN C

ORDER NO: 209212

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) Other :

11. TOXICOLOGICAL INFORMATION

Toxicity Data:
Data not available. Material not fully investigated. Handle as a potentially toxic material.

Toxicological Findings:
Evaluation of toxicological data on this material is currently unavailable. See Section 3 of this MSDS for an overview of known or anticipated health effects.

12. DISPOSAL CONSIDERATIONS

Waste Numbers: N/A

Treatment:
Not applicable; material is a non-hazardous and non-regulated solid waste. Landfill or thermal oxidation facility. Incineration is not recommended for organics.

These methods are drawn from 40 CFR, Protection of Environment, and are to be applied only after thorough review of all applicable Methods of Treatment or Treatment Standards. The waste generator is advised to contract with a licensed Treatment, Storage, and Disposal facility when arranging for final disposal and to consult state and local authorities to determine whether any additional regulatory requirements need to be met.

13. TRANSPORT INFORMATION

- Proper Shipping Name: Not regulated.
Technical Name: Technical name not required.
ID Number: Not applicable.
Hazard Class: Not applicable.
Subsidiary Risk: Not applicable.
Packing Group: N/A
Label(s) Required: Not applicable.
Other: Not applicable.

TA Proper Shipping Name: Not regulated.

PRODUCT: ASCORBIC ACID, VITAMIN C

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PROD NO : 720201

IATA ID Number: Not applicable.
 IATA Hazard Class: Not applicable.
 IATA Subsidiary Risk: Not applicable.
 IATA Packing Group: N/A
 IATA Label(s) Required: Not applicable.
 IATA Other: Not applicable.

IMDG Proper Shipping Name: Not regulated.
 IMDG ID Number: Not applicable.
 IMDG Hazard Class: Not applicable.
 IMDG Subsidiary Risk: Not applicable.
 IMDG Packing Group: N/A
 IMDG Label(s) Required: Not applicable.
 IMDG Other: Not applicable.

 14. REGULATORY INFORMATION

TSCA Inventory: N/A

TSCA Statement:

The components of this material appear in the Toxic Substances Control Act (TSCA) Chemical Substances Inventory and are available for commercial use.

OSHA Specifically Required

This material is not regulated by OSHA.

TSCA Memo: NONE

SARA Title III Hazard Categories:

Acute Health

Component	SARA EHS (302)	SARA EHS TPQ (lbs)	CERCLA RQ (lbs)
Ascorbic Acid			

Component	OSHA Floor List	SARA 313	DeMinimis for SARA 313 (%)
Ascorbic Acid			

 15. OTHER INFORMATION

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Comments:

NE

IFIS Hazard Ratings:

Health	: 0
Flammability	: 0
Reactivity	: 0
Protective Equipment	: A
Special Hazards	: NA

A = NOT AVAILABLE

E = NOT ESTABLISHED

FOR ADDITIONAL INFORMATION

CONTACT: MSDS COORDINATOR UNIVAR USA INC.
 DURING BUSINESS HOURS, PACIFIC TIME (425)869-3400

12/24/02 11:17 PRODUCT: 720201 CUST NO: 113365 ORDER NO: 209212

NOTICE

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ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED

HEREIN, AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR

CONSEQUENTIAL DAMAGES. **

DO NOT USE INGREDIENT INFORMATION AND/OR PERCENTAGES IN THIS MSDS AS A PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM YOUR LOCAL UNIVAR SALES OFFICE.

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE

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MATERIAL SAFETY DATA SHEET

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*** END OF MSDS ***

10-0340



Material Safety Data Sheet

NFPA	HMIS		Personal Protective Equipment
	Health Hazard	3	 See Section 15.
Fire Hazard	1		
Reactivity	0		

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	Pyrocatechol	Code	P4870
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248-9985	CAS#	120-80-9
Commercial Name(s)	Not available	RTECS	UXT050000
Synonym	1,2-Benzenediol	TSCA	On the TSCA list.
Chemical Name	Catechol	CI#	Not available.
Chemical Family	Not available.	In case of emergency CHEMTREC (24hr) 800-424-9300 Emergency phone: (310) 516-8000	
Chemical Formula	C ₆ H ₆ O ₂		
Supplier	SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, CA 90248-9985		

Section 2. Composition and Information on Ingredients

Name	CAS#	Exposure Limits			
		TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
Pyrocatechol	120-80-9				100
Toxicological Data on Ingredients	Pyrocatechol:				

Section 3. Hazards Identification

Potential Acute Health Effects	Extremely dangerous in case of skin contact (corrosive, irritant), of eye contact (irritant), of ingestion, of inhalation. Very dangerous in case of skin contact (sensitizer, permeator). Corrosive to eyes and skin. Severe over-exposure can result in death. Can be fatal if inhaled or ingested. This product may irritate eyes and skin upon contact. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Potential Chronic	Extremely dangerous in case of skin contact (corrosive, irritant), of eye contact (irritant), of ingestion, of inhalation. Very dangerous in case of skin contact (sensitizer, permeator). CARCINOGENIC

Health Effects

EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. The substance is toxic to lungs, mucous membranes. Toxicity of the product to the reproductive system: Not available. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.
Skin Contact	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Hazardous Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
Ingestion	Remove dentures if any. Watch for an obstruction in the victim's mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victim's teeth. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Seek immediate medical attention.
Hazardous Ingestion	Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Remove dentures if any. Watch for an obstruction in the victim's mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victim's teeth. If a soft pad can be inserted between the victim's teeth, it will protect the tongue from being bitten. A badly bleeding tongue immensely complicates the patient's problems. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. If convulsions occur, do not restrain the victim, but do remove objects with which he (she) might injure himself (herself) or orient the victim to prevent him (her) from striking fixed heavy objects. If the convulsions cease, turn the victim on the side or face down so that any fluid in the mouth will drain. Seek immediate medical attention.

Section 5. Fire and Explosion Data

Flammability of the Product	Combustible.
Auto-Ignition Temperature	Not available.
Flash Points	CLOSED CUP: 127.22.C (261.F) OPEN CUP: 136.67.C (278.F)
Flammable Limits	Not available.

Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	No specific information is available in our database regarding the flammability of this product in presence of various materials.
Explosion 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. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Special Remarks on Fire Hazards	No additional remark.
Special Remarks on Explosion Hazards	No additional remark.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Large Spill	Poisonous solid. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal.

Section 7. Handling and Storage

Precautions	Keep locked up. 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 dust. 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.
Storage	Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Highly toxic or infectious materials should be stored in a separate locked safety storage cabinet or room.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Gloves (impervious). Wear appropriate respirator when ventilation is inadequate.
Personal	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus

Protection in
Case of a
Large Spill

sufficient; consult a specialist BEFORE handling this product.

Exposure
Limits

TWA: 5 (ppm) TWA: 20 (mg/m) Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid.	Odor	Slight.
Molecular Weight	110.11	Taste	Sweet. Bitter.
pH (1% soln/water)	Not available.	Color	Colorless.
Boiling Point	245.5.C (473.9.F)		
Melting Point	105.C (221.F)		
Critical Temperature	Not available.		
Specific Gravity	1.344 (Water = 1)		
Vapor Pressure	Not available.		
Vapor Density	3.79 (Air = 1)		
Volatility	Not available.		
Odor Threshold	Not available.		
Evaporation rate	Not available.		
Viscosity	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water.		
Solubility	Soluble in cold water.]		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	No additional remark.
Incompatibility with Various Substances	No specific information is available in our database regarding the reactivity of this material in presence of various other materials.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	No additional remark.
Special Remarks on Corrosivity	No additional remark.


Section 11. Toxicological Information

Routes of Entry	Ingestion. Skin contact. Inhalation.
-----------------	--------------------------------------

Toxicity to Animals	Acute oral toxicity (LD50): 210 mg/kg (Guinea pig). Acute dermal toxicity (LD50): 800 mg/kg (Rabbit).
Chronic Effects on Humans	The substance is toxic to lungs, mucous membranes. Toxicity of the product to the reproductive system: Not available.
Other Toxic Effects on Humans	Extremely dangerous in case of skin contact (corrosive, irritant), of eye contact (irritant), of ingestion, of inhalation. Very dangerous in case of skin contact (sensitizer, permeator).
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on other Toxic Effects on Humans	No additional remark.

Section 12. Ecological Information	
Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	These products are carbon oxides (CO, CO2).
Toxicity of the Products of Biodegradation	The products of degradation are more toxic.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations	
Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.

Section 14. Transport Information	
DOT Classification	DOT CLASS 6.1: Poisonous material.
Identification	Toxic solid, organic, n.o.s. (Pyrocatechol) UN2811 III
Special Provisions for Transport	No additional remark.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). Components present in this product at a level which could require reporting under the statute are:

NONE

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are:

Pyrocatechol

Pensylvania Right-To-Know, Hazardous substance List, Hazardous Substances and Special hazardous Substances on the list must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

Pyrocatechol

Massachusetts Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

Pyrocatechol

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are:

Pyrocatechol

WARNING: This product contains a chemical known to the State of California to cause cancer. Chemical ingredient(s) requiring this warning:

NONE

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Chemical ingredient(s) requiring this warning: NONE

Other Classifications

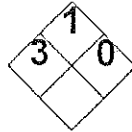
WHMIS (Canada)





WHMIS CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC)

R39- Danger of very serious irreversible effects.
R41- Risk of serious damage to eyes.
R21/22- Harmful in contact with skin and

Other Classifications	WHMIS (Canada)	WHMIS CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).
	DSCL (EEC)	R39- Danger of very serious irreversible effects. R41- Risk of serious damage to eyes. R21/22- Harmful in contact with skin and if swallowed. R26/27/28- Very toxic by inhalation, in contact with skin and if swallowed. R42/43- May cause sensitization by inhalation and skin contact.

HMIS (U.S.A.)	Health Hazard	2	National Fire Protection Association (U.S.A.)		Flammability
	Fire Hazard	1			Reactivity
	Reactivity	0			Specific hazard
	Personal Protection	0			Health

Personal Protective Equipment		Protective Gloves (impervious).
		Lab coat.
		Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
		Splash goggles.

Section 16. Other Information

References Not available.

Catalog Number(s) P1455

Other Special Considerations No additional remark.

Validated by E. Brull on 12/17/96.

Verified by E. Brull.
Name

Emergency Phone: (310)516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Chemical Mfg. Corp. assumes no responsibility for the completeness or accuracy of the information contained herein.

10-1100

REPORT NUMBER: 703

VAN WATERS & ROGERS INC.

PAGE: 001

MSDS NO: DZ70511

MATERIAL SAFETY DATA SHEET

DATAFRAME UPLOAD DATE: 04/14/00

VERSION: 003

PRODUCT: PROPYLENE GLYCOL INDUSTRIAL

ORDER NO: 185336

PROD NO : 330190

PHOTOGRAPHERS FORMULARY

CALL IN ADVANCE TO MEET

HC-31

BOX 89

CONDON ,MT 59806

VAN WATERS & ROGERS INC. , A ROYAL DUPAK COMPANY (425)889-3400
6100 CARILLON POINT , KIRKLAND , WA 98033

----- EMERGENCY ASSISTANCE -----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

PRODUCT NAME: PROPYLENE GLYCOL INDUSTRIAL

MSDS #: DZ70511

EFFECTIVE DATE: 4/13/00

2. COMPOSITION/INFORMATION ON INGREDIENTS

PROPYLENE GLYCOL CAS# 000057-55-6 99%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

* COLORLESS LIQUID. ODORLESS. TOXIC FUMES ARE RELEASED IN FIRE *
* SITUATIONS. *

POTENTIAL HEALTH EFFECTS (SEE SECTION 11 FOR TOXICOLOGICAL DATA.)

EYE: MAY CAUSE SLIGHT TRANSIENT (TEMPORARY) EYE IRRITATION.
CORNEAL INJURY IS UNLIKELY. MISTS MAY CAUSE EYE IRRITATION.

SKIN: PROLONGED CONTACT IS ESSENTIALLY NONIRRITATING TO SKIN. A
SINGLE PROLONGED EXPOSURE IS NOT LIKELY TO RESULT IN THE MATER-
IAL BEING ABSORBED THROUGH SKIN IN HARMFUL AMOUNTS. REPEATED

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EXPOSURES MAY CAUSE FLAKING AND SOFTENING OF SKIN. MAY BE ABSORBED IN POTENTIALLY HARMFUL AMOUNTS WHEN APPLIED IN LARGE QUANTITIES TO SEVERE BURNS (SECOND OR THIRD DEGREE) OVER LARGE AREAS OF THE BODY AS PART OF A CREAM OR OTHER TOPICAL APPLICATION. ABSORPTION UNDER SUCH CIRCUMSTANCES CAN ELEVATE SERUM OSMOLALITY AND MAY RESULT IN OSMOTIC SHOCK.

INGESTION: SINGLE DOSE ORAL TOXICITY IS CONSIDERED TO BE EXTREMELY LOW. NO HAZARDS ANTICIPATED FROM SWALLOWING SMALL AMOUNTS INCIDENTAL TO NORMAL HANDLING OPERATIONS.

INHALATION: AT ROOM TEMPERATURE, VAPORS ARE MINIMAL DUE TO PHYSICAL PROPERTIES. MISTS MAY CAUSE IRRITATION OF UPPER RESPIRATORY TRACT.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: REPEATED EXCESSIVE INGESTION MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS.

CANCER INFORMATION: DID NOT CAUSE CANCER IN LONG-TERM ANIMAL STUDIES.

TERATOLOGY (BIRTH DEFECTS): BIRTH DEFECTS ARE UNLIKELY. EXPOSURES HAVING NO ADVERSE EFFECTS ON THE MOTHER SHOULD HAVE NO EFFECT ON THE FETUS.

REPRODUCTIVE EFFECTS: IN ANIMAL STUDIES, HAS BEEN SHOWN NOT TO INTERFERE WITH REPRODUCTION.

4. FIRST AID

EYE: FLUSH EYES WITH PLENTY OF WATER.

SKIN: WASH OFF IN FLOWING WATER OR SHOWER.

INGESTION: NO ADVERSE EFFECTS ANTICIPATED BY THIS ROUTE OF EXPOSURE INCIDENTAL TO PROPER INDUSTRIAL HANDLING.

INHALATION: REMOVE TO FRESH AIR IF EFFECTS OCCUR. CONSULT A PHYSICIAN.

NOTE TO PHYSICIAN: NO SPECIFIC ANTIDOTE. SUPPORTIVE CARE, TREATMENT BASED ON JUDGMENT OF THE PHYSICIAN IN RESPONSE TO REACTIONS OF THE PATIENT.

7. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: 215F, 103C

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METHOD USED: FMCC

AUTOIGNITION TEMPERATURE: NOT DETERMINED

FLAMMABILITY LIMITS

LFL: 2.6%

UFL: 12.5%

HAZARDOUS COMBUSTION PRODUCTS: DURING A FIRE, SMOKE MAY CONTAIN THE ORIGINAL MATERIAL IN ADDITION TO UNIDENTIFIED TOXIC AND/OR IRRITATING COMPOUNDS. HAZARDOUS COMBUSTION PRODUCTS MAY INCLUDE AND ARE NOT LIMITED TO: ALDEHYDES, CARBON MONOXIDE.

OTHER FLAMMABILITY INFORMATION: VIOLENT STEAM GENERATION OR ERUPTION MAY OCCUR UPON APPLICATION OF DIRECT WATER STREAM TO HOT LIQUIDS. SPILLS OF THESE ORGANIC LIQUIDS ON HOT FIBROUS INSULATIONS MAY LEAD TO LOWERING OF THE AUTOIGNITION TEMPERATURES POSSIBLY RESULTING IN SPONTANEOUS COMBUSTION.

EXTINGUISHING MEDIA: WATER FOG OR FINE SPRAY. CARBON DIOXIDE, DRY CHEMICAL, FOAM, ALCOHOL RESISTANT FOAMS (ATC TYPE) ARE PREFERRED IF AVAILABLE. GENERAL PURPOSE SYNTHETIC FOAMS (INCLUDING AFFF) OR PROTEIN FOAMS MAY FUNCTION, BUT MUCH LESS EFFECTIVELY. DO NOT USE DIRECT WATER STREAM. WILL SPREAD FIRE.

MEDIA TO BE AVOIDED: DO NOT USE DIRECT WATER STREAM.

FIRE FIGHTING INSTRUCTIONS: KEEP PEOPLE AWAY. ISOLATE FIRE AREA AND DENY UNNECESSARY ENTRY. BURNING LIQUIDS MAY BE MOVED BY FLUSHING WITH WATER TO PROTECT PERSONNEL AND MINIMIZE PROPERTY DAMAGE. BURNING LIQUIDS MAY BE EXTINGUISHED BY DILUTION WITH WATER. DO NOT USE DIRECT WATER STREAM. MAY SPREAD FIRE.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: WEAR POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS (SCBA) AND PROTECTIVE FIRE FIGHTING CLOTHING (INCLUDES FIRE FIGHTING HELMET, COAT, PANTS, BOOTS, AND GLOVES). IF PROTECTIVE EQUIPMENT IS NOT AVAILABLE OR NOT USED, FIGHT FIRE FROM A PROTECTED LOCATION OR SAFE DISTANCE.

6. ACCIDENTAL RELEASE MEASURES (SEE SECTION 15 FOR REGULATORY

INFORMATION)

PROTECT PEOPLE: ISOLATE AREA.

PROTECT THE ENVIRONMENT: CONTAIN LIQUID TO PREVENT CONTAMINATION OF SOIL, SURFACE WATER OR GROUND WATER.

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CLEANUP: FOR SMALL SPILLS, CLEAN UP WITH ABSORBENT MATERIAL.
COLLECT MATERIAL IN SUITABLE AND PROPERLY LABELED OPEN CON-
TAINERS. FOR LARGE SPILLS, DIKE AND PUMP INTO SUITABLE AND
PROPERLY LABELED CONTAINERS.

7. HANDLING AND STORAGE

HANDLING: PRODUCT HANDLED HOT MAY REQUIRE ADDITIONAL VENTILATION
OR LOCAL EXHAUST.

STORAGE: KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE. STORE
IN STAINLESS STEEL, ALUMINUM, FLASITE 3066 LINED CONTAINERS,
OR 316 STAINLESS STEEL.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: PROVIDE GENERAL AND/OR LOCAL EXHAUST
VENTILATION TO CONTROL AIRBORNE LEVELS BELOW THE EXPOSURE
GUIDELINES.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: USE SAFETY GLASSES. SAFETY GLASSES SHOULD
BE SUFFICIENT FOR MOST OPERATIONS; HOWEVER, FOR MISTY
OPERATIONS WEAR CHEMICAL GOGGLES.

SKIN PROTECTION: USE GLOVES IMPERVIOUS TO THIS MATERIAL.

RESPIRATORY PROTECTION: ATMOSPHERIC LEVELS SHOULD BE MAINTAINED
BELOW THE EXPOSURE GUIDELINE. WHEN RESPIRATORY PROTECTION IS
REQUIRED FOR CERTAIN OPERATIONS, USE AN APPROVED AIR-PURIFYING
RESPIRATOR. IN MISTY ATMOSPHERES, USE AN APPROVED MIST
RESPIRATOR.

EXPOSURE GUIDELINE(S): PROPYLENE GLYCOL: AHA WEL IS 50 PPM
TOTAL, 10 MG/M3 AEROSOL ONLY.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: COLORLESS LIQUID

ODOR: ODORLESS

VAPOR PRESSURE: 0.08 MMHG @ 20C, 68F

VAPOR DENSITY: 2.62

BOILING POINT: 370F, 188C

SOLUBILITY IN WATER: COMPLETE

SPECIFIC GRAVITY: 1.028 20/20C, 68F

10. STABILITY AND REACTIVITY

PRODUCT: PROPYLENE GLYCOL INDUSTRIAL

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CHEMICAL STABILITY: STABLE.

CONDITIONS TO AVOID: PRODUCT CAN DECOMPOSE AT ELEVATED TEMPERATURES.

INCOMPATIBILITY WITH OTHER MATERIALS: AVOID CONTACT WITH OXIDIZING MATERIALS.

HAZARDOUS DECOMPOSITION PRODUCTS: WHEN AVAILABLE OXYGEN IS LIMITED, AS IN A FIRE OR WHEN HEATED TO VERY HIGH TEMPERATURES BY HOT WIRE OR PLATE, CARBON MONOXIDE AND OTHER HAZARDOUS COMPOUNDS SUCH AS ALDEHYDES MIGHT BE GENERATED.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION (SEE SECTION 3 FOR POTENTIAL HEALTH

EFFECTS. FOR DETAILED TOXICOLOGICAL DATA, WRITE OR CALL THE ADDRESS OR NON-EMERGENCY NUMBER SHOWN IN SECTION 1)

SKIN: THE LD50 FOR SKIN ABSORPTION IN RABBITS IS >10,000 MG/KG.

INGESTION: THE ORAL LD50 FOR RATS IS 20,000-34,000 MG/KG.

MUTAGENICITY: IN VITRO MUTAGENICITY STUDIES WERE NEGATIVE.
ANIMAL MUTAGENICITY STUDIES WERE NEGATIVE.

12. ECOLOGICAL INFORMATION (FOR DETAILED ECOLOGICAL DATA, WRITE OR CALL

THE ADDRESS OR NON-EMERGENCY NUMBER SHOWN IN SECTION 1)

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: BASED LARGELY OR COMPLETELY ON INFORMATION FOR SIMILAR MATERIAL(S), I.E. PROPYLENE GLYCOL. BIOCONCENTRATION POTENTIAL IS LOW (BCF LESS THAN 100 OR LOG POW LESS THAN 3). LOG OCTANOL/WATER PARTITION COEFFICIENT (LOG POW) IS -0.92. HENRY'S LAW CONSTANT (H) IS 1.2E-9 ATM.M3/MOLE.

DEGRADATION & PERSISTENCE: BASED LARGELY OR COMPLETELY ON INFORMATION FOR SIMILAR MATERIAL(S), I.E. PROPYLENE GLYCOL. BIODEGRADATION UNDER AEROBIC STATIC LABORATORY CONDITIONS IS HIGH (BOD50 OR BOD25/TD50 GREATER THAN 40%). BIODEGRADATION IS EXPECTED TO BE ACHIEVABLE IN A SECONDARY WASTEWATER TREATMENT PLANT. 5-DAY BIOCHEMICAL OXYGEN DEMAND

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(BOD5) IS 1.16 P/P. 20-DAY BIOCHEMICAL OXYGEN DEMAND (BOD20) IS 1.45 P/P. THEORETICAL OXYGEN DEMAND (THOD) IS CALCULATED TO BE 1.60 P/P. INHIBITORY CONCENTRATION (IC50) IN OECD ACTIVATED SLUDGE RESPIRATION INHIBITION TEST (OECD TEST NO. 209) IS GREATER THAN 1 GM/L. DEGRADATION IS EXPECTED IN THE ATMOSPHERIC ENVIRONMENT WITHIN MINUTES TO HOURS.

ECOTOXICITY: BASED LARGELY OR COMPLETELY ON INFORMATION FOR SIMILAR MATERIAL(S), I.E. PROPYLENE GLYCOL. MATERIAL IS PRACTICALLY NON-TOXIC TO AQUATIC ORGANISMS ON AN ACUTE BASIS (LC50 GREATER THAN 100 MG/L IN MOST SENSITIVE SPECIES).

ACUTE LC50 FOR FATHEAD MINNOW (PIMEPHALES PROMELAS) IS 46500-54900 MG/L.

ACUTE LC50 FOR GUPPY (HECILIA RETICULATA) IS GREATER THAN 10000 MG/L.

ACUTE LC50 FOR WATER FLEA DAPHNIA MAGNA IS 4650-34400 MG/L.

ACUTE LC50 FOR RAINBOW TROUT (ONCORHYNCHUS MYKISS) IS 44 ML/L (ABOUT 44000 MG/L).

13. DISPOSAL CONSIDERATIONS (SEE SECTION 15 FOR REGULATORY INFORMATION)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. ALL DISPOSAL METHODS MUST BE IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL LAWS AND REGULATIONS. REGULATIONS MAY VARY IN DIFFERENT LOCATIONS. WASTE CHARACTERIZATIONS AND COMPLIANCE WITH APPLICABLE LAWS ARE THE RESPONSIBILITY SOLELY OF THE WASTE GENERATOR. THE DOW CHEMICAL 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 AS DESCRIBED IN MSDS SECTION 2 (COMPOSITION/INFORMATION ON INGREDIENTS).

FOR UNUSED & UNCONTAMINATED PRODUCT, THE PREFERRED OPTIONS INCLUDE SENDING TO A LICENSED, PERMITTED: RECYCLER, RECLAIMER, INCINERATOR, WASTE WATER TREATMENT SYSTEM.

AS A SERVICE TO ITS CUSTOMERS, DOW CAN PROVIDE NAMES OF INFORMATION RESOURCES TO HELP IDENTIFY WASTE MANAGEMENT COMPANIES AND OTHER FACILITIES WHICH RECYCLE, REPROCESS OR MANAGE CHEMICALS OR PLASTICS, AND THAT MANAGE USED DRUMS. TELEPHONE DOW'S CUSTOMER INFORMATION CENTER AT 800-258-2436 OR 517-832-1556 FOR FURTHER DETAILS.

14. TRANSPORT INFORMATION

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DEPARTMENT OF TRANSPORTATION: THIS PRODUCT IS NOT REGULATED BY
D.O.T. WHEN SHIPPED DOMESTICALLY BY LAND.

CANADIAN TDG INFORMATION: FOR TDG REGULATORY INFORMATION, IF
REQUIRED, CONSULT TRANSPORTATION REGULATIONS, PRODUCT SHIPPING
PAPERS, OR YOUR DOW REPRESENTATIVE.

15. REGULATORY INFORMATION (NOT MEANT TO BE ALL-INCLUSIVE---SELECTED
REGULATIONS REPRESENTED)

NOTICE: THE INFORMATION HEREIN IS PRESENTED IN GOOD FAITH AND
BELIEVED TO BE ACCURATE AS OF THE EFFECTIVE DATE SHOWN ABOVE. HOWEVER,
NO WARRANTY, EXPRESS OR IMPLIED IS GIVEN. REGULATORY REQUIREMENTS
ARE SUBJECT TO CHANGE AND MAY DIFFER FROM ONE LOCATION TO ANOTHER;
IT IS THE BUYER'S RESPONSIBILITY TO ENSURE THAT ITS ACTIVITIES COMPLY
WITH FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS. THE FOLLOWING
SPECIFIC INFORMATION IS MADE FOR THE PURPOSE OF COMPLYING WITH
NUMEROUS FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS AND REGULATIONS.
SEE OTHER SECTIONS FOR HEALTH AND SAFETY INFORMATION.

SARA 313 INFORMATION: TO THE BEST OF OUR KNOWLEDGE, THIS PRODUCT
CONTAINS NO CHEMICAL SUBJECT TO SARA TITLE III SECTION 313 SUPPLIER
NOTIFICATION REQUIREMENTS.

SARA HAZARD CATEGORY: THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE
EPA "HAZARD CATEGORIES" PROMULGATED UNDER SECTIONS 311 AND 312 OF THE
SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND
IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING
CATEGORIES:

NOT TO HAVE MET ANY HAZARD CATEGORY

TOXIC SUBSTANCES CONTROL ACT (TSCA):

ALL INGREDIENTS ARE ON THE TSCA INVENTORY OR ARE NOT REQUIRED TO BE
LISTED ON THE TSCA INVENTORY.

STATE RIGHT-TO-KNOW: THE FOLLOWING PRODUCT COMPONENTS ARE CITED ON
CERTAIN STATE LISTS AS MENTIONED. NON-LISTED COMPONENTS MAY BE SHOWN

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IN THE COMPOSITION SECTION OF THE MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
1,2-PROPANEDIOL	000057-55-6	PA1 PA1 PA3

PA1=PENNSYLVANIA HAZARDOUS SUBSTANCE (PRESENT AT GREATER THAN OR EQUAL TO 1.0%).

OSHA HAZARD COMMUNICATION STANDARD:

THIS PRODUCT IS NOT A "HAZARDOUS CHEMICAL" AS DEFINED BY THE OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200.

CANADIAN REGULATIONS

WHMIS INFORMATION: THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION FOR THIS PRODUCT IS:

THIS PRODUCT IS NOT A "CONTROLLED PRODUCT" UNDER WHMIS.

16. OTHER INFORMATION

10-0940



Gardena, CA

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">1</td> </tr> </table>	Health Hazard	3	Fire Hazard	0	Reactivity	1	<p>See Section 15.</p>
Health Hazard	3							
Fire Hazard	0							
Reactivity	1							

Section 1. Chemical Product and Company Identification			
Common Name/ Trade Name	Potassium carbonate	Code	P4210
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248-9985	CAS#	584-08-7
Commercial Name(s)	Not available	RTECS	TS7750000
Synonym	Not available.	TSCA	On the TSCA list.
Chemical Name	Not available.	CI#	Not available.
Chemical Family	Not available.	In case of emergency	
Chemical Formula	K ₂ CO ₃	CHEMTREC (24hr) 800-424-9300	
Supplier	SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, CA 90248-9985	Emergency phone: (310) 516-8000	

Section 2. Composition and Information on Ingredients					
			<i>Exposure Limits</i>		
Name	CAS#	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
Potassium carbonate	584-08-7				100
Toxicological Data on Ingredients	Potassium carbonate: ORAL (LD50): Acute: 1870 mg/kg (Rat).				

Section 3. Hazards Identification	
Potential Acute Health Effects	Extremely dangerous in case of skin contact (irritant), of eye contact (irritant). Very dangerous in case of skin contact (corrosive), of ingestion, of inhalation. Corrosive to eyes and skin. This product may irritate eyes and skin upon contact. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Potential Chronic	Extremely dangerous in case of skin contact (irritant), of eye contact (irritant). Very dangerous in case of skin contact (corrosive), of ingestion, of inhalation. CARCINOGENIC EFFECTS: Not

Health Effects available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. The substance is toxic to mucous membranes. Toxicity of the product to the reproductive system: Not available. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. DO NOT use an eye ointment. Seek medical attention.

Skin Contact If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Hazardous Skin Contact Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Hazardous Inhalation No additional information.

Ingestion Remove dentures if any. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. NEVER give an unconscious person anything to ingest. Seek medical attention.

Hazardous Ingestion No additional information.

Section 5. Fire and Explosion Data

Flammability of the Product Non-flammable.

Auto-Ignition Temperature Not applicable.

Flash Points Not applicable.

Flammable Limits Not applicable.

Products of Combustion	Not applicable.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion 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. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	Non-flammable.
Special Remarks on Fire Hazards	No additional remark.
Special Remarks on Explosion Hazards	No additional remark.

Section 6. Accidental Release Measures	
Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Our database contains no additional information in case of a spill and/or a leak of the product. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage	
Precautions	DO NOT ingest. DO NOT breathe dust. 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 as acids, moisture.
Storage	No specific storage is required. Use shelves or cabinets sturdy enough to bear the weight of the chemicals. Be sure that it is not necessary to strain to reach materials, and that shelves are not overloaded.

Section 8. Exposure Controls/Personal Protection	
Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Gloves (impervious). Wear appropriate respirator when ventilation is inadequate.
Personal	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus

Protection in
Case of a
Large Spill

sufficient; consult a specialist BEFORE handling this product.

Exposure
Limits

Not available.

Section 9. Physical and Chemical Properties

Physical state
and appearance

Solid. (Powdered solid.)

Odor Odorless.

Molecular Weight

138.21

Taste Not available.

pH (1% soln/water)

Not available.

Color White.

Boiling Point

Decomposes.

Melting Point

891.C (1635.8.F)

Critical Temperature

Not available.

Specific Gravity

2.29 (Water = 1)

Vapor Pressure

Not available.

Vapor Density

Not available.

Volatility

Not available.

Odor Threshold

Not available.

Evaporation rate

Not available.

Viscosity

Not available.

Water/Oil Dist. Coeff.

Not available.

Ionicity (in Water)

Not available.

Dispersion Properties

Not available.

Solubility

Not available.

Section 10. Stability and Reactivity Data

Stability

The product is stable.

Instability Temperature

Not available.

Conditions of Instability

No additional remark.

Incompatibility with
Various Substances

Extremely reactive or incompatible with acids. Slightly reactive to reactive with moisture.

Corrosivity

Non-corrosive in presence of glass.

Special Remarks
on Reactivity

No additional remark.

Special Remarks
on Corrosivity

No additional remark.

Section 11. Toxicological Information

Routes of Entry

Ingestion, Inhalation.

Toxicity to Animals Acute oral toxicity (LD50): 1870 mg/kg (Rat).

Chronic Effects on Humans

The substance is toxic to mucous membranes. Toxicity of the product to the reproductive system: Not available.

Other Toxic Effects on Humans

Extremely dangerous in case of skin contact (irritant), of eye contact (irritant). Very dangerous in case of skin contact (corrosive), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals

No additional remark.

Special Remarks on Chronic Effects on Humans

No additional remark.

Special Remarks on other Toxic Effects on Humans

No additional remark.

Section 12. Ecological Information

Ecotoxicity

Not available.

BOD5 and COD

Not available.

Products of Biodegradation

Some metallic oxides.

Toxicity of the Products of Biodegradation

The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation

No additional remark.

Section 13. Disposal Considerations

Waste Disposal

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

Section 14. Transport Information

DOT Classification

Not a DOT controlled material (United States).

Identification

Not applicable (PIN and PG).

Special Provisions for Transport

Not applicable.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). Components present in this product at a level which could require reporting under the statute are:

NONE

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are:

NONE

Pennsylvania Right-To-Know, Hazardous substance List, Hazardous Substances and Special hazardous Substances on the list must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

NONE

Massachusetts Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

NONE

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are:

NONE

WARNING: This product contains a chemical known to the State of California to cause cancer. Chemical ingredient(s) requiring this warning:

NONE

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Chemical ingredient(s) requiring this warning: NONE

Other Classifications

WHMIS (Canada)

WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC)

R22- Harmful if ingested.
R41- Risk of serious damage to eyes.

Other Classifications

WHMIS (Canada)

WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).

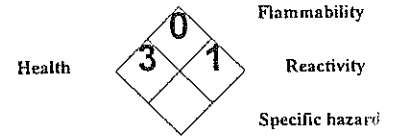
DSCL (EEC)

R22- Harmful if ingested.
R41- Risk of serious damage to eyes.

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	0
Reactivity	1
Personal Protection	0

National Fire Protection Association (U.S.A.)



Personal Protective Equipment



Protective Gloves (impervious).



Lab coat.



Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Splash goggles.

Section 16. Other Information**References** Not available.**Catalog Number(s)** P1235, P1236, P1237, P1238, P1240, XX612**Other Special Considerations** No additional remark.**Validated by** E. Brull on 12/17/96.**Verified by** E. Brull.
Name**Emergency Phone:** (310)516-8000**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Chemical Mfg. Corp. assumes no responsibility for the completeness or accuracy of the information contained herein.