

rinse, then pour back in the used developer for about two minutes with agitation at about 30 second intervals. Discard this used developer and wash and dry as described in the two bath section above. Development times for all films are approximately the same (other than for ultra slow adapted copying films, or ultra fast low light films). **Fine tune these times to suit your equipment and technique.** For printing on graded paper use a normal time of about 8 minutes; for VC paper use 10 minutes. For high subject brightness ranges cut by about 20%; for low, increase by 25%. Zone system workers should conduct their own usual film speed and development time tests.

#### **PUSH PROCESSING**

Push processing is not recommended for normal use.

#### **N - AND N + PROCESSING, TWO BATH**

Fine photographers working with the Zone System who wish to control the contrast of their negatives during two bath processing to match their exposure for either low or high subject brightness ranges can do so. However, time is not a good control since the developing agents contained in Solution A which are saturated into the emulsion are virtually used to exhaustion during the immersion in Solution B. Therefore extension of time does not work well. Reducing times conversely leads to inconveniently short duration and the risk of unevenness. The best method is to vary the dilution while retaining the N time you have found to be right for your equipment. You should conduct new tests. For N - conduct trials at 1:24 dilution for both baths. For N + 1, start trials at 1:9 dilution for Solution A, and 1:14 Solution B. **Note: do not use Solution B stronger than 1:14 or streaking, fogging, and negative unevenness is very likely.**

#### **LIABILITY**

No liability is accepted by the maker and/or supplier of this developer other than for the value of the developer itself if faulty. No liability can be accepted for any consequential loss or injury. The maker/supplier will be pleased to refund the purchase price of this product even if the outer packaging has been opened if you do not wish to accept this condition provided that the bottles are returned to the maker/supplier unopened within 14 days of purchase. Only open one or both of the bottles if you accept this condition. You are strongly advised to conduct your own tests before committing valuable films to this developer.

**FOR ANSWERS TO QUESTIONS ON THE USE OF DiXactol DEVELOPER, PLEASE CALL US AT 406-754-2891.**

**F**PHOTOGRAPHERS'  
**FORMULARY INC.**

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

DiXactol FILM DEVELOPER

PAGE 6

**F**PHOTOGRAPHERS'  
**FORMULARY INC.**

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

Barry Thornton's  
**DiXACTOL®**

## *Single or two bath film developer*

**DiXACTOL®** is a unique developer of special interest to artists and photographers producing monochrome fine prints, yet it is also uniquely tolerant and easy to use. It has four main distinguishing characteristics. It produces the fullest palette of richly graduated tones, especially in the holding of translucent and delicately drawn highlights particularly resistant to "blocking up" at high exposure levels. At the same time, shadow detail and separation is nursed up to unusual levels. Printing is likely to need significantly less burning in, in landscape skies for instance, and graduation is likely to be markedly superior in these burned-in areas. Discriminating workers appreciating the fine separation of tones should find this a satisfying developer. Secondly, the sharpness of images produced is remarkable with outstanding acutance. The maker believes this to be the sharpest developer of any commercially available solution.

Thirdly, unlike normal high definition developers, the grain appears as fine as standard developers due to a special grain masking effect

Finally, all films (with the exception of adapted document copying films and ultra high speed films) can be developed together in the two bath option, regardless of film speed or make, for about the same time, and with great tolerance of exposure and processing temperature, to produce printable negatives. The maker believes the tolerance to be superior to any other make or type of developer, and it makes the simultaneous processing of roll films containing many different pictures with greatly varying subject brightness ranges practical. Photographers using zone system exposure control on roll film should find it possible to give a single processing time that allows higher quality printing on a narrower spread of paper contrast grades. N+ or N- development times are still perfectly possible for those zone system workers wishing to exercise tight control of tonal contrast, but the need for this is much reduced. For ultimate control of negative density for individual film emulsions, and for even greater solution economy, single bath processing is available, and the 'spread' of suggested development times for varying films is narrower than conventional developers. This means developing differing film emulsions together for the same time is frequently a practical proposition. Single bath development gives slightly greater sharpness and stain masking too.

DiXactol FILM DEVELOPER  
PHOTOGRAPHERS' FORMULARY  
800-922-5255

PAGE 1



10-0340



Gardena, CA

# 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	<b>Pyrocatechol</b>	Code	P4870
		CAS#	120-80-9
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248-9985	RTECS	UX1050000
		TSCA	On the TSCA list.
Commercial Name(s)	Not available	CI#	Not available.
Synonym	1,2-Benzenediol	<b>In case of emergency</b>	
Chemical Name	Catechol	CHEMTREC (24hr) 800-424-9300	
Chemical Family	Not available.	Emergency phone: (310) 516-8000	
Chemical Formula	C <sub>6</sub> H <sub>6</sub> O <sub>2</sub>		
Supplier	SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, CA 90248-9985		

## Section 2. Composition and Information on Ingredients

Name	CAS#	Exposure Limits			% by Weight
		TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )	CEIL (mg/m <sup>3</sup> )	
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, CO2).
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, CO2, 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.
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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.
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**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.)	
	Fire Hazard	1		
	Reactivity	0		
	Personal Protection	0		


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.



THATCHER COMPANY MATERIAL SAFETY DATA SHEET

PRODUCT: SODIUM SULFITE, CATALYZED

Page 1 of 3

MSDS Date: December 2, 2003

Emergency Contact: 1-800-424-9300

SECTION I

PRODUCT NAME: Sodium Sulfite, Catalyzed

CHEMICAL NAME: Sodium Sulfite, catalyzed

CHEMICAL FAMILY: Inorganic Sulfite

SYNONYMS: B 501; Catalyzed Anhydrous Sodium Sulfite

FORMULA:  $\text{Na}_2\text{SO}_3$  + catalyst

DOT SHIPPING INFORMATION: Not DOT Regulated

SECTION II - HAZARDOUS INGREDIENTS

This material contains no ingredients which are known by Thatcher Company to be hazardous unless listed below.

HAZARDOUS MATERIAL	CAS NUMBER	w/w %	EXPOSURE LIMITS IN AIR
Sodium Sulfite	7757-83-7		TLV = 5 mg/m <sup>3</sup>
Cobalt Sulfate (as Co)	10124-43-3		TLV = 0.05 mg/m <sup>3</sup> * PEL = 0.1 mg/m <sup>3</sup>

\*recommended

The specific identity of some ingredients may be withheld for confidential business purposes. However, all known potential health effects from exposure to these ingredients are being addressed.

SECTION III - PHYSICAL DATA

BOILING POINT (F): N/A

SPECIFIC GRAVITY: 2.633 @ 15.4 EC

VAPOR PRESSURE (mm Hg): N/A

% VOLATILE, BY VOLUME: N/A

VAPOR DENSITY (air = 1): N/A

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: Soluble

APPEARANCE AND ODOR: White to pink crystals or powder with saline, sulfurous taste.

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT: Nonflammable

FLAMMABLE LIMITS:

Lel: N/A Uel: N/A

EXTINGUISHING MEDIA:



THATCHER COMPANY MATERIAL SAFETY DATA SHEET

PRODUCT: SODIUM SULFITE, CATALYZED

Page 2 of 3

Use any.

**SPECIAL FIRE-FIGHTING PROCEDURES:**

Wear self-contained breathing apparatus if necessary.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

When heated, catalyzed sodium sulfite decomposes and emits highly toxic fumes of sodium oxide and sulfur oxides.

**SECTION V - REACTIVITY DATA**

**STABILITY:** Stable

**HAZARDOUS POLYMERIZATION:** Will not occur.

**CONDITIONS OR MATERIALS TO AVOID:**

None.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

When heated, catalyzed sodium sulfite decomposes and emits toxic fumes of sodium oxide and sulfur oxides.

**SECTION VI - HEALTH HAZARD DATA**

**CARCINOGENIC LISTING:**

NTP: No ingredients listed in this section.

IARC MONOGRAPHS: No ingredients listed in this section.

OSHA 29 CFR 1910: No ingredients listed in this section.

**ENTRY ROUTES & EFFECTS OF OVEREXPOSURE:**

**Contact:** Contact may irritate eyes.

**Ingestion:** If swallowed, can cause irritation of stomach, nausea and gas.

**STATEMENT OF PRACTICAL TREATMENT:**

**Contact:** Flush exposed area thoroughly with soap and water. For eyes, flush with cool water for at least 15 minutes. If irritation persists, get medical attention.

**Ingestion:** If swallowed, give several glasses of water and call a physician immediately.

**SECTION VII - SPECIAL PRECAUTIONS**



THATCHER COMPANY MATERIAL SAFETY DATA SHEET  
PRODUCT: SODIUM SULFITE, CATALYZED  
Page 3 of 3

**HANDLING AND STORAGE PRECAUTIONS:**

Store in a cool, dry area.

**STEPS TO BE TAKEN IF MATERIAL SPILLS OR LEAKS:**

Wear proper safety equipment. Sweep up material and put into drums. Flush residue to sewer with large amounts of water (if permitted).

**WASTE DISPOSAL METHOD:**

Dispose of in landfill. Comply with all local, state and federal regulations.

**OTHER PRECAUTIONS:**

N/A

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION:**

Use dust mask as needed to avoid breathing dust.

**VENTILATION:**

Use adequate ventilation.

**EYE PROTECTION:**

Wear goggles or safety glasses.

**SKIN PROTECTION:**

Wear rubber gloves.

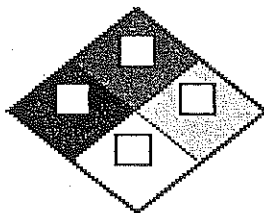
**OTHER PROTECTIVE EQUIPMENT:**

None required.

ACGIH = American Conference of Governmental Industrial Hygienists  
CL = Ceiling Level  
IARC = International Agency for Research on Cancer: Monographs  
OSHA = Occupational Safety and Health Administration  
N/A = Not Applicable  
NTP = National Toxicology Program: Annual Report on Carcinogens  
PEL = Permissible Exposure Level (OSHA)  
TLV = Threshold Limit Value (ACGIH)  
TWA = Time Weighted Average over 8 Hours  
STEL = Short Term Exposure Limit (ACGIH)  
ND = Not Determined

This information is, to the best of our knowledge, accurate but may not be complete. THATCHER COMPANY furnishes this information in good faith, but without warranty, representation or guarantee of its accuracy, completeness, or reliability.





Material Safety Data Sheet  
 May be used to comply with  
 OSHA's Hazard Communication Standard  
 29 CFR 1910.1200 Standard must be  
 Consulted for specific requirements

U.S. Department of Labor  
 Occupational Safety And Health Administration  
 (Non-Mandatory Form)  
 Form Approved  
 OMB No. 1218-0072

Identity (as used on label and list) <b>Glycin</b> CAS# 122-87-2	Note: Blank spaces are permitted, if any item is not applicable, or no information is available, the space must be marked to indicate that.
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Section I

Manufacturer's Name: Photographer's Formulary, Inc.	Emergency Telephone Number: 800-424-9300
Address (Number Street, City, State and Zip): Po Box 950 Condon MT 59826	Telephone Number for Information: 406-754-2891 / 800-922-5255
	Date Prepared: October 19, 2004

Section II – Hazardous Ingredients/Identity Information

Hazardous components (Specific Chemical Identity: Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits	% Optional
Chemical Name or Synonym: N- (P-Hydroxyphenyl) (Glycine)				
Chemical Family: Carboic Acid-Alcohol				
Formula: H0C6 H4NHCH2COOH				

Section III – Physical/Chemical Characteristics:

Boiling Point:	NA	Specific Gravity:	NA
Vapor Pressure: (mm Hg)	NA	Melting Point	230°
Vapor Density (AIR=1)	NA	Evaporation Rate (Butyl Acetate =1)	NA
Solubility in Water: Sparingly soluble			
Appearance and Order: White to off white powder, no odor			

Section IV – Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits:	LEL	UEL
Extinguishing Media: Water spray, Co2 Dry Chemical			
Special Fire Fighting Procedures:			

Section V – Reactivity Data

Stability	Unstable		Conditions to Avoid:
	Stable	X	

Incompatibility (Materials to Avoid)

Hazardous Polymerization	May Occur		Conditions to Avoid:
	Will Not Occur	X	

Section VI – Health Hazard Data

Route(s) of Entry:	Inhalation:	Skin:	Ingestion:
Health Hazards (Acute and Chronic): Prolonged Exposure may be irritating to the skin or eyes.			
Carcinogenicity:	NTP:	IASC Monographs:	OSHA Regulated:
Signs and symptoms of Exposure			
Medical Conditions Generally Aggravated by Exposure:			
Emergency and First Aid Procedures: Wash with soap and warm water.			
Eye Contact: Flush eyes with water fro 15 minutes.			

Section VII – Precautions for safe Handling and Use:

Steps to be taken in case Material Is Released or Spilled: Remove all sources of ignition, shovel into dry containers, then flush area with water.
Waste Disposal Method: <b>For disposal please contact your local sewer and water authorities</b>
Material may be incinerated or sent to authorized treatment storage disposal facility.
Precautions to be Taken in Handling And Storing:
Other Precautions:

Section VIII – Control Measures

Respiratory Protection (Specify Type) Dust Mask		
Ventilation	Local Exhaust: Yes	Special:
	Mechanical:	Other:
Protective Gloves: Rubber	Eye Protection: Safety Goggles	
Other Protective Clothing or Equipment: Apron		
Work/ Hygienic Practices: Wash hands, face and all equipment used and counter tops.		



10-0920

REPORT NUMBER: 703  
MSDS NO: P21725VS  
MAINFRAME UPLOAD DATE: 07/16/04

UNIVAR USA INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 001  
VERSION: 003

PRODUCT: POTASSIUM BROMIDE

ORDER NO: 226085  
PROD NO : 614395

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 98053

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

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

\*\*\*\*\*  
PRODUCT IDENTIFICATION  
\*\*\*\*\*

PRODUCT NAME: POTASSIUM BROMIDE  
MSDS NUMBER: P21725VS  
DATE ISSUED: 11/19/02  
SUPERCEDES: NEW  
ISSUED BY: 006137  
REVIEWED DATE: 07/16/2004  
THIS MSDS HAS BEEN REVIEWED ON 07/16/2004, AND IS  
CURRENT AS OF THE DATE ISSUED ABOVE.

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE & THE COMPANY

CHEMICAL NAME POTASSIUM BROMIDE  
CHEMICAL FORMULA KBR  
MOLECULAR WEIGHT 120.98

TYPE OF PRODUCT AND USE

PRODUCT: POTASSIUM BROMIDE

ORDER NO: 226085

PROD NO : 614395

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FOR USE IN PHOTOGRAPHIC EMULSIONS AND DEVELOPING SOLUTIONS  
HEAT STABILIZER IN NYLON  
BROMINATING AGENT

COMPANY BROMINE COMPOUNDS LTD.  
P.O.B 180, BEER SHEVA 84101, ISRAEL  
TEL +972-8-6297830

SUPPLIER AMERIBROM, INC.  
2115 LINWOOD AVENUE, FORT LEE, NEW JERSEY 07024-5004  
USA TEL: 201 242 6560

EMERGENCY TELEPHONE CHEMTREC (800)424-9300

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	WEIGHT %	ACGIH-TLV DATA	OSHA (PEL) DATA
POTASSIUM BROMIDE	99.5	NOT DETERMINED	NOT DETERMINED
7758-02-3			

## 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW WHITE, ODOURLESS, CRYSTALLINE SOLID  
IRRITANT TO EYES

## POTENTIAL HEALTH EFFECTS:

- EYE CONTACT IRRITANT
- SKIN CONTACT NOT IRRITANT TO INTACT SKIN. SLIGHTLY IRRITANT ON PROLONGED CONTACT TO ABRADED SKIN.
- INHALATION MAY CAUSE IRRITATION TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
- INGESTION MAY CAUSE FALLING ASLEEP, MUSCULAR INCOORDINATION AND RESPIRATORY DEPRESSION.

ABDOMINAL PAIN, NAUSEA AND VOMITING.

## 4. FIRST-AID MEASURES

EYE CONTACT HOLDING THE EYELIDS APART, FLUSH EYES PROMPTLY WITH COPIOUS FLOWING WATER FOR AT LEAST 20 MINUTES.

GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT REMOVE CONTAMINATED CLOTHING. WASH SKIN THOROUGHLY WITH MILD SOAP AND PLENTY OF WATER FOR AT LEAST 15 MINUTES. WASH CLOTHING BEFORE RE-USE.

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GET MEDICAL ATTENTION IF IRRITATION OCCURS.

INHALATION IN CASE OF DUST INHALATION OR BREATHING FUMES RELEASED FROM HEATED MATERIAL, REMOVE PERSON TO FRESH AIR.

KEEP HIM QUIET AND WARM. APPLY ARTIFICIAL RESPIRATION IF NECESSARY AND GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION IF SWALLOWED, WASH MOUTH THOROUGHLY WITH PLENTY OF WATER AND GIVE WATER TO DRINK.

GET MEDICAL ATTENTION IMMEDIATELY.

NOTE: NEVER GIVE AN UNCONSCIOUS PERSON ANYTHING TO DRINK.

NOTES TO THE PHYSICIAN IN CASE OF INGESTION INDUCE VOMITING IN ALERT PATIENT. NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

#### 5 FIRE-FIGHTING MEASURES

FLASH POINT NONE

FLAMMABLE/EXPLOSION LIMITS NOT FLAMMABLE

AUTO-IGNITION TEMPERATURE NOT APPLICABLE

SUITABLE EXTINGUISHING MEDIA MATERIAL IS NOT COMBUSTIBLE. USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

#### FIRE FIGHTING PROCEDURE

COOL CONTAINERS WITH WATER SPRAY. IN CLOSED STORES, PROVIDE FIRE-FIGHTERS WITH SELF-CONTAINED BREATHING APPARATUS IN POSITIVE PRESSURE MODE.

#### UNUSUAL FIRE AND EXPLOSION

HAZARDS WILL DECOMPOSE FROM CA. 800 C RELEASING POISONOUS AND CORROSIVE FUMES OF HBR.

#### 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER GLOVES AND BOOTS.

METHODS FOR CLEANING UP SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL OR POSSIBLE RE-USE.

AVOID RAISING DUST.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

#### 7. HANDLING AND STORAGE

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HANDLING AVOID BODILY CONTACT.  
KEEP CONTAINERS TIGHTLY CLOSED.  
STORAGE HYGROSCOPIC. AVOID EXPOSURE TO MOISTURE.  
STORE IN A DRY, COOL, WELL-VENTILATED AREA AWAY FROM INCOMPATIBLE MATERIALS  
(SEE "MATERIALS TO AVOID").

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION REQUIREMENTS MECHANICAL EXHAUST REQUIRED.  
VENTILATION MUST BE SUFFICIENT TO MAINTAIN TLV-TWA BELOW 10 MG/M3 (ACGIH  
RECOMMENDATION FOR PARTICULATES (INSOLUBLE) NOT OTHERWISE SPECIFIED (PNOS)).

## PERSONAL PROTECTIVE EQUIPMENT:

- RESPIRATORY PROTECTION DUST RESPIRATOR
- HAND PROTECTION PVC GLOVES RUBBER GLOVES
- EYE PROTECTION CHEMICAL SAFETY GOGGLES
- SKIN AND BODY PROTECTION BODY COVERING CLOTHES AND BOOTS

HYGIENE MEASURES SAFETY SHOWER AND EYE BATH SHOULD BE PROVIDED. DO NOT EAT,  
DRINK OR SMOKE UNTIL AFTER-WORK SHOWERING AND CHANGING CLOTHES.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	WHITE, ODOURLESS, CRYSTALLINE SOLID
MELTING POINT/RANGE	734 C
BOILING POINT/RANGE	1435 C
VAPOUR PRESSURE	1 MM HG AT 795 C
VAPOR DENSITY	NOT APPLICABLE UNDER STANDARD CONDITIONS
EVAPORATION RATE (ETHER=1)	NOT APPLICABLE UNDER STANDARD CONDITIONS

## SOLUBILITY:

- SOLUBILITY IN WATER 65.5 G/100ML AT 20 C
- 102 GR/100ML AT 100 C
- SOLUBILITY IN OTHER SOLVENTS ALCOHOL: 0.142 G/1 00G AT 25 C

SPECIFIC GRAVITY 2.75  
DECOMPOSITION TEMPERATURE FROM CA. 800 C

## 10. STABILITY AND REACTIVITY

STABILITY HYGROSCOPIC.  
STABLE UNDER NORMAL CONDITIONS  
MATERIALS TO AVOID STRONG OXIDANTS  
STRONG ACIDS  
HEAVY METAL SALTS  
REACTS EXPLOSIVELY WITH BROMINE TRIFLUORIDE  
CONDITIONS TO AVOID EXPOSURE TO MOISTURE  
HEATING ABOVE DECOMPOSITION TEMPERATURE

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HAZARDOUS DECOMPOSITION  
PRODUCTS HBR  
HAZARDOUS POLYMERIZATION WILL NOT OCCUR

#### 11. TOXICOLOGICAL INFORMATION

##### ACUTE TOXICITY:

- RAT ORAL LD50 > 5000 MG/KG
- EYE IRRITATION (RABBIT) IRRITANT
- DERMAL IRRITATION (RABBIT) NOT IRRITANT

CHRONIC TOXICITY REPEATED SKIN CONTACT MAY CAUSE DERMATITIS.  
REPEATED ORAL INTAKE OF BROMIDES (>9 MG/KG BODY WEIGHT/DAY) MAY AFFECT THE CENTRAL NERVOUS SYSTEM. WARNING SYMPTOMS INCLUDE MENTAL DULLNESS, SLURRED SPEECH, WEAKENED MEMORY, APATHY, ANOREXIA, CONSTIPATION, DROWSINESS AND LOSS OF SENSITIVITY TO TOUCH AND PAIN.

MUTAGENICITY. NOT MUTAGENIC BY THE AMES TEST

CARCINOGENICITY NOT KNOWN TO BE A CARCINOGEN.  
NOT CLASSIFIED BY IARC.  
NOT INCLUDED IN NTP 9TH REPORT ON CARCINOGENS.

#### 12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE KBR IS AN INORGANIC SALT, WHICH FULLY DISSOCIATES IN AQUATIC ENVIRONMENT TO BROMIDE AND POTASSIUM IONS. IT ALSO UNDERGOES DEGRADATION IN SOIL TO BROMIDE ION (NO FURTHER DEGRADATION OR BIODEGRADATION WILL OCCUR).

##### AQUATIC TOXICITY

- LC50, FISH 3200 MG/L, 5 DAYS (RAINBOW TROUT)
- 48 HOUR-EC50, DAPHNIA MAGNA >100 MG/L

##### AVIAN TOXICITY:

- ORAL LD50, BOBWHITE QUAIL >2500 MG/KG
- DIETARY LC50, BOBWHITE QUAIL 6000 PPM

BIOACCUMULATIVE POTENTIAL BIOACCUMULATION IS NOT LIKELY TO OCCUR SINCE THIS MATERIAL IS HIGHLY SOLUBLE IN WATER.

#### 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL ADD INTO A LARGE VESSEL CONTAINING WATER AND DRAIN INTO SEWER WITH AMPLE WATER. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS WHEN DISPOSING OF THIS MATERIAL.

PRODUCT: POTASSIUM BROMIDE

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14. TRANSPORTATION INFORMATION

DOT NOT REGULATED  
IMO NOT REGULATED  
ICAO/IATA NOT REGULATED

## 15. REGULATORY INFORMATION

USA REPORTED IN THE EPA TSCA INVENTORY

CANADA LISTED IN DSL

EEC NO. 231-830-3  
JAPAN LISTED IN MITI (1-108)

AUSTRALIA LISTED IN AICS

CHINA INVENTORY LISTED

SOUTH KOREA LISTED IN ECL (KE-29079)

SWITZERLAND GIFTKLASSE 3  
PHILIPPINES LISTED IN PICCS

## 16. OTHER INFORMATION

THIS DATA SHEET CONTAINS CHANGES FROM THE PREVIOUS VERSION IN SECTION(S)  
8,15

THE HSE POLICY OF DEAD SEA BROMINE GROUP  
DEAD SEA BROMINE GROUP (DSBG) IS THE WORLD'S LARGEST PRODUCER OF ELEMENTAL  
BROMINE AND A RECOGNIZED LEADER IN THE DEVELOPMENT AND SUPPLY OF BROMINE  
COMPOUNDS.

DSBG IS COMMITTED TO RESPONSIBLY MANAGE ITS PRODUCTS AT ALL STAGES OF THEIR  
LIFE CYCLE IN ORDER TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT.  
THIS RESPONSIBILITY APPLIES THROUGHOUT DEVELOPMENT, MANUFACTURE,  
TRANSPORTATION, USE, RECYCLE AND DISPOSAL OF DSBG PRODUCTS.

WITHIN THIS FRAMEWORK DSBG IS COMMITTED TO:

- \* COMPLY WITH NATIONAL AND INTERNATIONAL REGULATORY REQUIREMENTS
- \* CONFORM TO THE ISO 14001 AND OHSAS 18001 REQUIREMENTS FOR ENVIRONMENTAL AND OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEMS AND PERIODICALLY EVALUATE PERFORMANCE AS PART OF THE COMPANY'S EXISTING QUALITY AUDITS SYSTEM
- \* DESIGN PRODUCTS AND PROCESSES WHICH PREVENT RISK TO HEALTH AND THE ENVIRONMENT AT PRODUCTION SITES AND ALONG THE SUPPLY CHAIN
- \* IMPROVE EFFICIENCY IN USE OF ENERGY & NATURAL RESOURCES, PROMOTE RECYCLING AND WASTE MANAGEMENT THROUGH SAFE & ENVIRONMENTALLY SOUND END OF LIFE

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PROGRAMS

- \* WORK FOR CONTINUAL IMPROVEMENT IN HSE PERFORMANCE
- \* REGULARLY ASSESS AND RESPONSIBLY MANAGE HEALTH, SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH PRODUCTS AND PROCESSES
- \* EDUCATE AND TRAIN ALL MANAGERS AND EMPLOYEES TO IMPROVE THEIR HSE PERFORMANCE
- \* DISTRIBUTE UPDATED INFORMATION CONCERNING ITS POLICY AND PRODUCTS TO ITS WORKERS, CUSTOMERS AND OTHER INTERESTED PARTIES THROUGH MATERIAL SAFETY DATA SHEET (MSDS), WORKERS' SAFETY SHEETS AND THROUGH THE DSBG INTERNET SITE
- \* DEVELOP BUSINESS RELATIONSHIPS WITH RESPONSIBLE SUPPLIERS, TRANSPORTERS AND DISTRIBUTORS AND PROVIDE THEM WITH HSE SUPPORT, INFORMATION AND TRAINING
- \* SUPPORT PRODUCT STEWARDSHIP PROGRAMS IN COOPERATION WITH CUSTOMERS, DISTRIBUTORS AND TRANSPORTERS
- \* ALLOCATE THE NECESSARY RESOURCES FOR IMPLEMENTATION OF THIS POLICY

PREPARED BY HSE DIVISION IN ISRAEL

TELEPHONE: +/972-8-6297830

TELEFAX: +/972-8-6297832

WWW.DSBG.COM

END OF SAFETY DATA SHEET

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

10/28/04 08:52 PRODUCT: 614395 CUST NO: 113365 ORDER NO: 226085

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----- NOTICE -----  
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\*\*\*\*\* UNIVAR USA INC("UNIVAR"), EXPRESSLY DISCLAIMS

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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

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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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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  
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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.

\* \* \* E N D O F M S D S \* \* \*



10-1030

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PRODUCT: CAUSTIC POTASH ANHYDROUS (ALL GRADES)

ORDER NO: 240113

PROD NO : 500913

PHOTOGRAPHERS FORMULARY  
C/O REDDWAY DOCK  
CALL AND HE WILL PU

MISSOULA ,MT 59802

UNIVAR USA INC.

(425)889-3400

6100 CARILLON POINT , KIRKLAND

, WA 98033

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

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

\*\*\*\*\*  
PRODUCT IDENTIFICATION  
\*\*\*\*\*

PRODUCT NAME: CAUSTIC POTASH ANHYDROUS (ALL GRADES)

MSDS#: 0031867

DATE ISSUED: 05/17/2004

SUPERSEDES: 08/13/2003

ISSUED BY: 008730

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Occidental Chemical Corporation

5005 LBJ Freeway

P.O. Box 809050

Dallas, Texas 75380-9050

24 HOUR EMERGENCY TELEPHONE: 1-800-733-3665 or 1-972-404-3228 (U.S.);

32.3.575.55.55 (Europe);

1800-033-111 (Australia)

TO REQUEST AN MSDS: 1-866-295-5278 or 1-615-399-5148

CUSTOMER SERVICE: 1-800-752-5151 or 1-972-404-3800

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PRODUCT: CAUSTIC POTASH ANHYDROUS (ALL GRADES)

ORDER NO: 240113

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MSDS NUMBER: M31867

SUBSTANCE: CAUSTIC POTASH ANHYDROUS (ALL GRADES)

TRADE NAMES:

Caustic Potash Standard Crystal; Caustic Potash Standard Flake;  
Caustic Potash Flake Low Chloride; Caustic Potash-Crystal; Caustic  
Potash-Flake; Caustic Potash-Briquettes; Caustic Potash-Flake 90%; Caustic  
Potash Briquettes 90%; Caustic Potash Low Chloride 90%

SYNONYMS:

Potassium hydroxide, KOH Dry

PRODUCT USE:

glass manufacture, cleaner, process chemical, petroleum industry,  
food processing

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: POTASSIUM HYDROXIDE

CAS NUMBER: 1310-58-3

PERCENTAGE: 84.5-90.5

COMPONENT: WATER

CAS NUMBER: 7732-18-5

PERCENTAGE: 9.5-15.5

3. HAZARDOUS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=2

HMIS RATINGS (SCALE 0-4): HEALTH=3 FLAMMABILITY=0 REACTIVITY=2

EMERGENCY OVERVIEW:

COLOR: white

PHYSICAL FORM: solid

ODOR: odorless

MAJOR HEALTH HAZARDS: MAY CAUSE BURNS TO THE RESPIRATORY TRACT, SKIN, EYES  
AND GASTROINTESTINAL TRACT. MAY CAUSE PERMANENT EYE DAMAGE.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation (possibly severe), burns, pulmonary edema

LONG TERM EXPOSURE: to our knowledge, no effects are known

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SKIN CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe), burns

LONG TERM EXPOSURE: dermatitis

EYE CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe), burns, eye damage,  
blindness

LONG TERM EXPOSURE: visual disturbances

INGESTION:

SHORT TERM EXPOSURE: irritation (possibly severe), burns, nausea, vomiting

LONG TERM EXPOSURE: to our knowledge, no effects are known

CARCINOGEN STATUS:

OSHA: No

NTP: No

IARC: No

4. FIRST AID MEASURES

INHALATION:

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

SKIN CONTACT:

Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. Discard footwear which cannot be decontaminated. GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:

Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. Give large amounts of water. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. GET MEDICAL ATTENTION IMMEDIATELY.

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NOTE TO PHYSICIAN:

The absence of visible signs or symptoms of burns does NOT reliably exclude the presence of actual tissue damage.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA:

Do not use water. Use extinguishing agents appropriate for surrounding fire

FIRE FIGHTING:

Move container from fire area if it can be done without risk.

SENSITIVITY TO MECHANICAL IMPACT: Not sensitive

SENSITIVITY TO STATIC DISCHARGE: Not sensitive

FLASH POINT: Not flammable

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Shovel dry material into suitable container. Keep out of water supplies and sewers. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304), release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

STORAGE:

Store and handle in accordance with current regulations and standards. Keep container tightly closed and properly labeled. Do not store in aluminum container or use aluminum fitting or transfer lines, as flammable hydrogen gas may be generated. Keep separated from incompatible substances.

HANDLING:

Avoid breathing dust. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. When mixing, slowly add to water to minimize heat generation and spattering.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

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POTASSIUM HYDROXIDE:

2 mg m3 OSHA ceiling (vacated by FR 35338, June 30, 1993)

2 mg/m3 ACGIH ceiling

VENTILATION:

Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

EYE PROTECTION:

Wear chemical resistant safety goggles if eye contact is possible. When wet mixing, wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING:

Wear protective clothing to minimize skin contact. When potential for contact with wet material exists, wear Tychem(R) SL or a similar chemical protective suit. When potential for contact with dry material exists, wear disposable coveralls such as Tyvek(R).

GLOVES:

Wear suitable gloves. Discard contaminated leather goods. When wet mixing, wear chemical resistant gloves such as butyl rubber, natural rubber, neoprene or nitrile.

PROTECTIVE MATERIAL TYPES:

butyl rubber, canvas, leather, natural rubber, neoprene, nitrile, Tychem (R), Tyvek(R)

RESPIRATOR:

A NIOSH approved respirator with N95 (dust, fume, mist) filters may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. A half facepiece air-purifying respirator may be used in concentrations up to 10X the acceptable exposure level and a full facepiece air-purifying respirator may be used in concentrations up to 50X the acceptable exposure level.

Supplied air should be used when the level is expected to be above 50X the acceptable level, or when there is a potential for uncontrolled release.

A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: solid  
COLOR: white  
ODOR: odorless  
MOLECULAR WEIGHT: 56.11

PRODUCT: CAUSTIC POTASH ANHYDROUS (ALL GRADES)

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MOLECULAR FORMULA: KOH  
BOILING POINT: Not applicable  
MELTING POINT: 752 F (400 C)  
VAPOR PRESSURE: 60 mmHg @ 1013 C  
VAPOR DENSITY: Not applicable  
SPECIFIC GRAVITY (water=1): 2.044 @ 20 C  
WATER SOLUBILITY: 100%  
PH: Not applicable  
VOLATILITY: 0%  
ODOR THRESHOLD: Not available  
EVAPORATION RATE: Not applicable  
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

#### 10. STABILITY AND REACTIVITY

##### REACTIVITY:

Stable at normal temperatures and pressure.

##### CONDITIONS TO AVOID:

Avoid contact with water. Direct contact with water may cause an exothermic reaction. Carbon monoxide gas may form upon contact with reducing sugars, food and beverage products in enclosed spaces.

##### INCOMPATIBILITIES:

acids, halogenated compounds, prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys

##### HAZARDOUS DECOMPOSITION:

Thermal decomposition products: None known.

#### 11. TOXICOLOGICAL INFORMATION

##### CAUSTIC POTASH ANHYDROUS (ALL GRADES):

TOXICITY DATA: Potassium hydroxide: 365 mg/kg oral-rat LD50. As a solid, this material interacts with moist tissue to cause damage. When in solution, this material will affect all tissues with which it comes in contact. The severity of the tissue damage is a function of its concentration, the length of tissue contact time, and local tissue conditions. After exposure there may be a time delay before irritation and other effects occur. This material is a strong irritant and is corrosive to the skin, eyes, and mucous membranes. This material may cause severe burns and permanent damage to any tissue with which it comes into contact. Inhalation will cause severe irritation, possible burns with pulmonary edema, which may lead to pneumonitis. Skin contact with this material may cause severe irritation and corrosion of tissue. Eye contact can cause severe irritation, corrosion with possible corneal damage and blindness. In general, chronic effects are due to long-term irritation. This material may cause dermatitis on the skin, or recurrent corneal ulceration and visual disturbances. In rare cases reports have noted long

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term inhalation causes bronchial inflammatory reaction or obstructive airway dysfunction.

## 12. ECOLOGICAL INFORMATION

### ECOTOXICITY DATA:

#### FISH TOXICITY:

This material has exhibited moderate toxicity to aquatic organisms.

### FATE AND TRANSPORT:

#### BIODEGRADATION:

This material is inorganic and not subject to biodegradation.

### PERSISTENCE:

This material will exist in the disassociated state.

### BIOCONCENTRATION:

This material is believed not to bioaccumulate.

### OTHER ECOLOGICAL INFORMATION:

This material has exhibited slight toxicity to terrestrial organisms.

## 13. DISPOSAL CONSIDERATIONS

Reuse or reprocess if possible. Dispose in accordance with all applicable regulations.

## 14. TRANSPORT INFORMATION

### U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Potassium hydroxide, solid

ID NUMBER: UN 1813

HAZARD CLASS OR DIVISION: 8

PACKING GROUP: II

LABELING REQUIREMENTS: 8

DOT HAZARDOUS SUBSTANCE(S):

Potassium hydroxide 1000 lb(s) (454 kg(s))

### CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Potassium hydroxide, solid

CLASS: 8

PACKING GROUP/RISK GROUP: II

## 15. REGULATORY INFORMATION

### U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

POTASSIUM HYDROXIDE: 1000 LBS RQ

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SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):  
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: Yes

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: This product may contain contaminants known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact Customer Service.

NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW:

REPORTING REQUIREMENT:

POTASSIUM HYDROXIDE 1310-58-3 84.5-90.5%

WATER 7732-18-5 9.5-15.5%

RIGHT TO KNOW HAZARDOUS SUBSTANCE LIST:

POTASSIUM HYDROXIDE 1310-58-3 84.5-90.5%

SPECIAL HEALTH HAZARD SUBSTANCE LIST:

POTASSIUM HYDROXIDE 1310-58-3 84.5-90.5%

PENNSYLVANIA RIGHT TO KNOW:

REPORTING REQUIREMENT:

POTASSIUM HYDROXIDE 1310-58-3 84.5-90.5%

WATER 7732-18-5 9.5-15.5%

HAZARDOUS SUBSTANCE LIST:

POTASSIUM HYDROXIDE 1310-58-3 84.5-90.5%

ENVIRONMENTAL HAZARDOUS SUBSTANCE LIST:

POTASSIUM HYDROXIDE 1310-58-3 84.5-90.5%

SPECIAL HAZARDOUS SUBSTANCE LIST:

Not regulated.

CANADIAN REGULATIONS:

CONTROLLED PRODUCTS REGULATIONS (CPR): This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR)



REPORT NUMBER: 703

UNIVAR USA INC.

PAGE: 009

MSDS NO: DC31B67

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 06/03/04

VERSION: 007

PRODUCT: CAUSTIC POTASH ANHYDROUS (ALL GRADES)

ORDER NO: 240113

PROD NO : 500913

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and the MSDS contains all of the information required by the CPR.

WHMIS CLASSIFICATION: D1B, E.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): All the components of this substance are listed on  
or are exempt from the inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): All components of this product are listed on  
the DSL.

16. OTHER INFORMATION

MSDS SUMMARY OF CHANGES

15. REGULATORY INFORMATION

REPORT NUMBER: 703

UNIVAR USA INC.

PAGE: 010

MSDS NO: 0C31867

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 06/03/04

VERSION: 007

PRODUCT: CAUSTIC POTASH ANHYDROUS (ALL GRADES)

ORDER NO: 240113

PRD NO : 500913

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----- FOR ADDITIONAL INFORMATION -----  
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CONTACT: MSDS COORDINATOR

UNIVAR USA INC.

DURING BUSINESS HOURS, PACIFIC TIME

(425)889-3400

03/27/06 14:40

PRODUCT: 500913

CUST NO: 113365

ORDER NO: 240113

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----- NOTICE -----  
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ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

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PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED

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

-----  
CONSEQUENTIAL DAMAGES. \*\*

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SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM  
YOUR LOCAL UNIVAR SALES OFFICE.

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\*\*\* END OF MSDS \*\*\*