

CATALOG NUMBER 01-0085 TO MAKE 10 LITERS

## PHOTOGRAPHERS' FORMULARY

### FORMULARY FX-2 HIGH ACUTANCE FILM DEVELOPER

Formulary FX-2 produces negatives with a high degree of sharpness and normal grain with the capability of interesting internal effects.

Due to the greater definition obtainable with FX-2, grain is less apparent than with D-76. Compared with FX-1, FX-2 produces negatives with finer grain and less acutance, but both have distinctly different pleasing effects. FX-2 used as a stand developer for one hour produces the most interesting internal contrast effects of the FX developers.

#### CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read the warning label on each package.

Metol: Some individuals become sensitized (develop allergic symptoms or rashes) when using metol. If this should happen, discontinue use and see a physician.

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 THIRTY DAYS FOR A FULL REFUND.

#### CHEMICALS CONTAINED IN THIS KIT

CHEMICAL	AMOUNT
Metol	5 g
Sodium Sulfite	70 g
Glycin	15 g
Potassium Carbonate, Anhydrous	123 g
Pinacryptol Yellow (1:2000 dilution)	100 ml

#### MIXING THE STOCK SOLUTIONS

FOR BEST RESULTS USE DISTILLED WATER.

You will need two 1 liter bottles, one of which should be brown. To mix the stock solution you will need 2000 ml (2 liters) of water that has been boiled for 3 minutes then cooled to about 32° C/90° F, or distilled water heated to approximately 32° C/90° F. The boiling degasses the water and minimizes the initial oxidation of the metol and glycin.

We recommend you wear a dust mask, splash goggles, rubber gloves and a vinyl apron anytime you are mixing dry chemicals.

#### STOCK SOLUTION A

Chemical	Amount
Distilled Water (32° C/90° F)	900 ml
Sodium sulfite, anhydrous	70 g
Metol	5 g
Glycin	15 g
Distilled Water (32° C/90° F) water to make	1000 ml



PORT NUMBER: 703  
SIS NO: GC003068  
EFFECTIVE DATE: 11/23/92

VAN WATERS & ROGERS INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 001  
VERSION: 002

PRODUCT: SODIUM SULFITE  
10-1340

ORDER NO: 141120  
PROD NO : 503217

PHOTOGRAPHERS FORMULARY  
C/O UNITED FRT. TERMINAL

KALISPELL ,MT 59806

VAN WATERS & ROGERS INC. , SUBSIDIARY OF UNIVAR (206)889-3400  
100 CARILLON POINT , KIRKLAND , WA 98033

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

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

SKIA

----- FOR PRODUCT AND SALES INFORMATION -----

CONTACT YOUR LOCAL VAN WATERS & ROGERS BRANCH OFFICE AT  
VW&R SPOKANE 509-534-0405 SPOKANE , WA

PRODUCT NAME:  
SODIUM SULFITE  
SDS #: GC003068

GENERAL INFORMATION

TRADE NAME (COMMON NAME): SODIUM SULFITE, SULFTECH(TM) grade Sodium Sulfite  
A.S. No. 7757-83-7  
CHEMICAL NAME AND/OR SYNONYM: Sodium Sulfite  
FORMULA: Na2SO3  
MOLECULAR WEIGHT: 126.04  
ADDRESS: GENERAL CHEMICAL CORPORATION  
90 East Halsey Road  
Parsippany, NJ 07054-0389  
LOCAL CONTACT: Manager of Product Safety  
LOCAL PHONE NUMBER: (201) 515-1840  
CURRENT ISSUE DATE: July, 1990

FIRST AID MEASURES

EMERGENCY PHONE NUMBER: (800) 631-8050  
EYES: Immediately flush with plenty of water, for at least 15 minutes. Get medical attention.  
SKIN: Promptly wash with plenty of soap and water.  
INHALATION: Remove to fresh air. If symptoms persist, get medical attention.

REPORT NUMBER: 703  
SDS NO: GC003068  
EFFECTIVE DATE: 11/23/92

VAN WATERS & ROGERS INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 002  
VERSION: 002

PRODUCT: SODIUM SULFITE

ORDER NO: 141120  
PROD NO : 503217

INGESTION: If conscious, immediately give 2 to 4 glasses of water or milk and induce vomiting by touching finger to back of throat. Get immediate medical attention.

### C. HAZARDS INFORMATION

#### HEALTH -

INHALATION: Inhalation of product dust or mist may irritate respiratory tract. Contact with acids liberates irritating and potentially fatal sulfur dioxide gas.

INGESTION: Ingestion may irritate gastrointestinal tract. Estimated to be moderately toxic. May cause severe allergic reaction in some asthmatics and sulfite sensitive individuals. Large doses may cause violent colic and diarrhea, circulatory disturbances, central nervous system depression and even death.--Reference (a).

SKIN: Dust or mist may cause skin irritation from prolonged contact. Solutions will irritate. See pH, Section F. Rabbit and guinea pig data available, Reference (b).

EYES: Dust or mist may irritate or burn eyes. Solutions will irritate or burn. See pH, Section F.

PERMISSIBLE CONCENTRATION: AIR: (SEE SECTION J)  
None established for sodium sulfite.  
OSHA/TWA for SO<sub>2</sub> = 2 ppm  
OSHA/STEL for SO<sub>2</sub> = 5 ppm  
BIOLOGICAL: None established.

UNUSUAL CHRONIC TOXICITY: See Section K.

#### FIRE AND EXPLOSION -

FLASH POINT: Not flammable.

AUTO IGNITION TEMPERATURE: NA

FLAMMABLE LIMITS IN AIR (% BY VOL.): LOWER - NA UPPER - NA

UNUSUAL FIRE AND EXPLOSION HAZARDS: See Hazardous Decomposition Products, Section G.

### D. PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED: NA

FIRE EXTINGUISHING AGENTS TO AVOID: NA

SPECIAL FIRE FIGHTING PRECAUTIONS: Wear NIOSH-approved self-contained breathing apparatus. Use water-spray to keep containers cool, and to knock down fumes.

VENTILATION: LOCAL EXHAUST if dusty or misty condition prevails.

LOCAL EXHAUST if there is release of sulfur dioxide gas, see Section G. Keep incompatible materials out of hoods, ducts, etc.

NORMAL HANDLING: Avoid contact with eyes, skin, clothing. Avoid breathing dust or mist. Use with adequate ventilation.

STORAGE: Store in a cool, dry area, away from acids or oxidizers. Keep container closed. Protect from physical damage.

SPILL OR LEAK (ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT - SECTION E):

PORT NUMBER: 703  
DS NO: GC003068  
EFFECTIVE DATE: 11/23/92

VAN WATERS & ROGERS INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 003  
VERSION: 002

PRODUCT: SODIUM SULFITE

ORDER NO: 141120  
PROD NO : 503217

Promptly shovel up dry chemical into an empty container, and cover.  
Store as above. Cautiously spray residue with plenty of water. (See  
Section I for disposal methods.)

SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS: SIGNAL WORD - WARNING!  
Contact with acids releases irritating and potentially fatal sulfur  
dioxide gas. See drum-handling instructions on label. When dissolving,  
add water cautiously and with stirring.

#### PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: If dusty or misty conditions prevail, use dust or  
mist respirator approved by NIOSH. If sulfur dioxide should be released  
(see Section G), use respiratory protection approved by NIOSH for this  
gas.--Reference (c).

EYES AND FACE: If exposed to dust or mist or solution, wear hard hat (or  
other head covering) and chemical safety goggles. Do not wear contact  
lenses.

HANDS, ARMS, AND BODY: Wear full work-clothing, including long-sleeved shirt  
and trousers for routine product-handling. Cotton gloves are usually  
adequate for dry product. For solutions, wear impervious gloves and  
apron. If contact is repeated or prolonged, wear full impervious  
clothing.

OTHER CLOTHING AND EQUIPMENT: Eyewash facility.

#### PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS): SOLID

APPEARANCE AND ODOR: White granular crystals or powder. Odorless.

BOILING POINT: Decomposes 900 Degrees C

MELTING POINT: ND

SPECIFIC GRAVITY (H2O=1): 2.63

VAPOR DENSITY (AIR=1): NA

SOLUBILITY IN WATER (% by Weight): (Calculated as the anhydrous salt)  
17% solution at 10 Degrees C  
28% solution at 33.4 Degrees C

PH: 1% solution; pH=9.8 (approx.)

VAPOR PRESSURE (mm Hg at 20 Degrees C): NA

EVAPORATION RATE (Ether=1): NA (Butyl Acetate = 1): NA

PERCENT VOLATILES BY VOLUME (At 20 Degrees C): NA

#### REACTIVITY DATA

STABILITY: STABLE

CONDITIONS TO AVOID: High temperature (before melting); yield sulfur dioxide  
gas and hazardous residue (details below).

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZERS cause vigorous  
exothermic reactions.

ACIDS release sulfur dioxide gas (details below).

REPORT NUMBER: 703  
MSDS NO: GCO03068  
EFFECTIVE DATE: 11/23/92

VAN WATERS & ROGERS INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 004  
VERSION: 002

PRODUCT: SODIUM SULFITE

ORDER NO: 141120  
PROD NO : 503217

HAZARDOUS DECOMPOSITION PRODUCTS: SULFUR DIOXIDE GAS: toxic and corrosive.  
SODIUM SULFIDE RESIDUE: flammable, dangerous fire risk, strong irritant  
to skin and tissue, incompatible with acids.  
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR  
CONDITIONS TO AVOID: NA

#### H. HAZARDOUS INGREDIENTS (Mixtures Only)

MATERIAL OR COMPONENT/C.A.S. #: Not Applicable.

#### I. ENVIRONMENTAL

##### DEGRADABILITY/AQUATIC TOXICITY:

Aquatic Toxicity: 2600 ppm/24, 48 & 96 hr/mosquito fish/TLM/fresh water.  
Biological Oxygen Demand (BOD): 0.12 lb/lb, instantaneous.---Reference (d).

OCTANOL/WATER PARTITION COEFFICIENT: ND

EPA HAZARDOUS SUBSTANCES (CLEAN WATER ACT SEC. 311): NO

IF SO REPORTABLE QUANTITY: -- (40 CFR 116-117)

WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL  
DISPOSAL OR DISCHARGE LAWS): Dissolve in water, using caution as solution  
can get hot. Neutralize with acid and flush to sewer with plenty of water  
if permitted by applicable disposal regulations. Good ventilation is  
required during neutralization due to release of SO<sub>2</sub> gas. Oxidation to  
sodium sulfate solution may be required, as for example, by adding a  
slight excess of dilute hydrogen peroxide carefully and with stirring.  
Neutralized waste may have to be disposed of by an approved contractor.

RCRA STATUS OF UNUSED MATERIAL IF DISCARDED: Not a "hazardous waste".

HAZARDOUS WASTE NUMBER: (IF APPLICABLE): NA (40 CFR 261)

#### J. REFERENCES

##### PERMISSIBLE CONCENTRATION REFERENCES:

None.

##### REGULATORY STANDARDS:

FDA regulations apply to the use of food grade material (21 CFR).

D.O.T. CLASSIFICATION: Not Regulated (49 CFR 173)

##### GENERAL:

- (a) Monograph 139, "Sulfite Salts", Gosselin, R.E. et al., CLINICAL TOXICOLOGY OF COMMERCIAL PRODUCTS, 4th Ed., 1976.
- (b) NIOSH, REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, 1981-82, P881 - 154478, No. WE215 00 00.
- (c) NIOSH/OSHA "Pocket Guide to Chemical Hazards", DHHS (NIOSH) Pub. No. 78-210, 1978, Gov't. Printing Office, Washington 20402.
- (d) Coast Guard CHRIS system form SSF, "Sodium Sulfite", Oct. 1978.

#### K. ADDITIONAL INFORMATION

Sodium sulfite has been demonstrated to be mutagenic in microbial systems;

REPORT NUMBER: 703  
EHS NO: GC003068  
EFFECTIVE DATE: 11/23/92

VAN WATERS & ROGERS INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 005  
VERSION: 002

PRODUCT: SODIUM SULFITE

ORDER NO: 141120  
PROD NO : 503217

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However, it is not mutagenic in studies involving insects and is not considered to present a mutagenic threat to multicell organisms, (i.e. animals, humans).

This product is not for drug or food use unless so labeled.

For food grade product, the following applies:

- 1) Effective July 9, 1986, the FDA has banned the use of "Sulfiting Agent" or "Sulfites" on fruits and vegetables intended to be served or sold raw to consumers.
- 2) Effective July 9, 1987, the FDA is requiring when a sulfite is present in a detectable amount in a finished food, regardless of whether it has been directly or indirectly added via one or more of the food ingredients, it must be declared on the label. The regulation defines a "detectable amount" of sulfite to be 10 ppm.
- 3) Sulfiting agents or sulfites are not to be used on foods or meats recognized as a source of Vitamin B1.

FOOTNOTE: ND = NOT DETERMINED            NA = NOT APPLICABLE  
          \* = PROPRIETARY - TRADE SECRET







# Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table border="1"> <tr> <td>Health Hazard</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Fire Hazard</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Reactivity</td> <td style="text-align: center;">0</td> </tr> </table>	Health Hazard	2	Fire Hazard	1	Reactivity	0	<p>See Section 15.</p>
Health Hazard	2							
Fire Hazard	1							
Reactivity	0							

Section 1. Chemical Product and Company Identification	
Common Name/ Trade Name	<b>METOL</b>
Code	M4060
CAS#	55-55-0
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248-9985
RTECS	SL8650000
TSCA	On the TSCA list.
Commercial Name(s)	Not available
CI#	Not available.
Synonym	Methyl-p-aminophenol Sulfate
Chemical Name	
Chemical Family	Not available.
Chemical Formula	C14H20N2O6S
Supplier	SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, CA 90248-9985
<b>In case of emergency</b> <b>CHEMTREC (24hr) 800-424-9300</b> <b>Emergency phone: (310) 516-8000</b>	

Section 2. Composition and Information on Ingredients					
			<i>Exposure Limits</i>		
Name	CAS#	TWA (mg/m3)	STEL (mg/m3)	CEIL (mg/m3)	% by Weight
METOL	55-55-0				100
Toxicological Data on Ingredients	METOL:				

Section 3. Hazards Identification	
Potential Acute Health Effects	Slightly dangerous to dangerous in case of eye contact (irritant), of ingestion. Very slightly to slightly dangerous in case of skin contact (irritant), of inhalation. This product may irritate eyes and skin upon contact.
Potential Chronic	Slightly dangerous to dangerous in case of eye contact (irritant), of ingestion. Very slightly to slightly dangerous in case of skin contact (irritant), of inhalation. CARCINOGENIC EFFECTS: Not available.

Health Effects MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. Toxicity of the product to the reproductive system: Not available.

**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** No additional information.

**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** Combustible.

**Auto-Ignition Temperature** 532.C (989.6.F)

**Flash Points** Not available.

**Flammable Limits** Not available.

Products of Combustion	These products are carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO, NO <sub>2</sub> ...).
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 <sub>2</sub> , 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. 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	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. Avoid contact with eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.
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. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

#### 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. Wear appropriate respirator when ventilation is inadequate.
Personal	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient;

Protection in  
Case of a  
Large Spill

Exposure Limits Not available.

**Section 9. Physical and Chemical Properties**

Physical state and appearance	Solid.	Odor	Not available.
Molecular Weight	344.39	Taste	Not available.
pH (1% soln/water)	Not available.	Color	Not available.
Boiling Point	Not available.		
Melting Point	Decomposes.		
Critical Temperature	Not available.		
Specific Gravity	Not available.		
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	See solubility in water.		
Solubility	Partially 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.
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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)**

Not controlled under DSCL (Europe).

Toxicity to Animals LD50: Not available. LC50: Not available.

**Chronic Effects on Humans** Toxicity of the product to the reproductive system: Not available.

**Other Toxic Effects on Humans** Slightly dangerous to dangerous in case of eye contact (irritant), of ingestion.  
Very slightly to slightly dangerous in case of skin contact (irritant), 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** These products are carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...).

**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** Not a DOT controlled material (United States).

**Identification** Not applicable (PIN and PG).

**Special Provisions for Transport** Not applicable.

**DOT (Pictograms)**

Other Classifications

WHMIS (Canada)

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

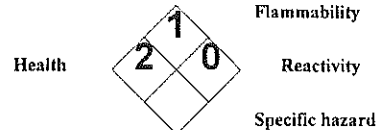
DSCL (EEC)

Not controlled under DSCL (Europe).

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	1
Reactivity	0
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)** M1290

**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** 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.



9/83

U.S. DEPARTMENT OF LABOR  
Occupational Safety and Health Administration

Form Approved  
OMB No. 4181337

# MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,  
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

## SECTION I

MANUFACTURER'S NAME Photographers Formulary Inc.		EMERGENCY TELEPHONE NO. 800-922-5255 406-543-4534
ADDRESS (Number, Street, City, State, and ZIP Code) PO Box 5105 115 S 4th W Missoula, MT 59806		
CHEMICAL NAME AND SYNONYMS N-(P-Hydroxyphenyl) (Glycine)		TRADE NAME AND SYNONYMS GLYCIN
CHEMICAL FAMILY Carbolic Acid -alcohol	FORMULA $\text{HOC}_6\text{H}_4\text{NHCH}_2\text{COOH}$	

## SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS		none	BASE METAL		none
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

## SECTION III - PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H <sub>2</sub> O=1)	
VAPOR PRESSURE (mm Hg.)		PERCENT VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____ #1)	
SOLUBILITY IN WATER	Sparingly soluble	Melting Point °C	230
APPEARANCE AND ODOR			

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA Water Spray, CO <sub>2</sub> dry chemical			
SPECIAL FIRE FIGHTING PROCEDURES			
UNUSUAL FIRE AND EXPLOSION HAZARDS			

Glycin

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

Prolonged exposure may be irritating to skin or eyes

EMERGENCY AND FIRST AID PROCEDURES

Skin contact: wash with soap and warm water.

Eye contact: flush eyes with water for 15 minutes.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	XX	

INCOMPATIBILITY (Materials to avoid)

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	XX	

SECTION VII - SPILL OR LEAK PROCEDURES

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

Material may be incinerated or sent to authorized treatment, storage, and disposal facility.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General) XX	

PROTECTIVE GLOVES rubber gloves EYE PROTECTION Safety goggles

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

OTHER PRECAUTIONS

THE WORLD'S FOREMOST MANUFACTURER OF RESEARCH  
BIOCHEMICALS AND DIAGNOSTIC REAGENTS

POST OFFICE BOX 14508  
SAINT LOUIS, MISSOURI 63178, USA

FAX: USA/CANADA 1-800-325-5052 OUTSIDE USA/CANADA 314-771-5757  
TELEX: 910-761-0593 or 434475 ANSWERBACK "SIG OK COLLECT"

TELEPHONE: USA/CANADA 1-800-325-3010  
OUTSIDE USA/CANADA call COLLECT 314-771-5750

ATTN: SAFETY DIRECTOR  
PHOTOGRAPHER FORMULARY  
PO BOX 5105  
MISSOULA MT 59806-5105

EMERGENCY PHONE 1-314-771-5765

DATE: 02/23/93  
CUST#: 6-051-70640  
PO#: 8100

M A T E R I A L   S A F E T Y   D A T A   S H E E T                      P A G E   1

----- IDENTIFICATION -----

PRODUCT #: P4155  
CAS #: 25910-85-4                      NAME: PINACRYPTOL YELLOW  
MF: C21H22N2C7S

----- TOXICITY HAZARDS -----

NO TOXICITY DATA AVAILABLE

----- HEALTH HAZARD DATA -----

ACUTE EFFECTS

MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.  
CAUSES EYE AND SKIN IRRITATION.  
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER  
RESPIRATORY TRACT.  
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND  
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

FIRST AID

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS 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.

----- PHYSICAL DATA -----

MELTING POINT: 260 C TO 262 C

APPEARANCE AND ODOR  
YELLOW POWDER

----- FIRE AND EXPLOSION HAZARD DATA -----

EXTINGUISHING MEDIA

WATER SPRAY.  
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES

CONTINUED ON NEXT PAGE

BRANCH OFFICES AT:

SIGMA CHEMIE GmbH Grünwalder Weg 30 D-8024 Deisenhofen Deutschland.	SIGMA QUIMICA Apt. Correo 161 28100 Alcobendas (Madrid) España.	SIGMA-ALDRICH, s.r.o. Krizkova 27 180 00 Praha 8 Czechoslovakia	SIGMA CHEMIE K. Cardijnplein, 8 B-2880 Bornem Belgie/Belgique.	SIGMA CHEMIE P.O. Box 260 CH-9470 Buchs Switzerland.
SIGMA CHEMICAL CO. LTD. Fancy Road, Poole, Dorset BH17 7NH England.	SIGMA CHIMIE L'Isle - D'Abeau Chesnes B.P.701 38297 St Quentin Fallavier Cedex, France.	SIGMA CHIMICA Div. della Sigma-Aldrich S.r.l. Via Gallarate 154 20151 Milano Italia.	Sigma-Aldrich Pty., Limited Unit 2, 10 Anella Ave. Castle Hill NSW 2154 Australia.	SIGMA-ALDRICH CHEMICAL REPRESENTAÇÕES LTDA. Rua Sabará, 566 - Conj. 53 01239-010 São Paulo, SP Brazil

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BIOCHEMICALS AND DIAGNOSTIC REAGENTS

M A T E R I A L   S A F E T Y   D A T A   S H E E T                      P A G E   2

CUST#: 6-051-70640  
PO#: 8100

PRODUCT #: P4155  
CAS #: 25910-85-4                      NAME: PINACRYPTOL YELLOW  
MF: C21H22N2O7S

--- FIRE AND EXPLOSION HAZARD DATA ---

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.

--- REACTIVITY DATA ---

INCOMPATIBILITIES  
STRONG OXIDIZING AGENTS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS  
TOXIC FUMES OF:  
CARBON MONOXIDE, CARBON DIOXIDE  
NITROGEN OXIDES  
SULFUR OXIDES

--- SPILL OR LEAK PROCEDURES ---

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED  
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY  
RUBBER GLOVES.  
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.  
AVOID RAISING DUST.  
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.  
WASTE DISPOSAL METHOD  
DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A  
CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.  
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

--- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE ---

CHEMICAL SAFETY GOGGLES.  
RUBBER GLOVES.  
NIOSH/MSHA-APPROVED RESPIRATOR.  
SAFETY SHOWER AND EYE BATH.  
MECHANICAL EXHAUST REQUIRED.  
AVOID CONTACT AND INHALATION.  
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.  
WASH THOROUGHLY AFTER HANDLING.  
IRRITANT.

CONTINUED ON NEXT PAGE

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THE WORLD'S FOREMOST MANUFACTURER OF RESEARCH  
BIOCHEMICALS AND DIAGNOSTIC REAGENTS

M A T E R I A L   S A F E T Y   D A T A   S H E E T                      P A G E   3

CUST#: 6-051-70640  
PO#: 8100

PRODUCT #: P4155  
CAS #: 25910-85-4                      NAME: PINACRYPTOL YELLOW  
MF: C21H22N2O7S

- - - - PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE - - - -

KEEP TIGHTLY CLOSED.

HYGROSCOPIC

STORE IN A COOL DRY PLACE.

LABEL PRECAUTIONARY STATEMENTS

IRRITANT

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF

WATER AND SEEK MEDICAL ADVICE.

WEAR SUITABLE PROTECTIVE CLOTHING.

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO  
BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA SHALL NOT BE  
HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH  
THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR A  
ADDITIONAL TERMS AND CONDITIONS OF SALE.

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REPRESENTAÇÕES LTDA.  
Rua Sabará, 566 - Corij. 53  
01239-010 São Paulo, SP  
Brazil



10-0940



# Material Safety Data Sheet

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

## Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	<b>Potassium carbonate</b>	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.	<b>In case of emergency</b>	
Chemical Formula	K <sub>2</sub> CO <sub>3</sub>	<b>CHEMTREC (24hr) 800-424-9300</b>	
Supplier	SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, CA 90248-9985	<b>Emergency phone: (310) 516-8000</b>	

## 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> )	
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**

<b>Eye Contact</b>	Check for and remove any contact lenses. DO NOT use an eye ointment. Seek medical attention.
<b>Skin Contact</b>	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.
<b>Hazardous Skin Contact</b>	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
<b>Inhalation</b>	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
<b>Hazardous Inhalation</b>	No additional information.
<b>Ingestion</b>	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.
<b>Hazardous Ingestion</b>	No additional information.

**Section 5. Fire and Explosion Data**

<b>Flammability of the Product</b>	Non-flammable.
<b>Auto-Ignition Temperature</b>	Not applicable.
<b>Flash Points</b>	Not applicable.
<b>Flammable Limits</b>	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.)
Molecular Weight	138.21
pH (1% soln/water)	Not available.
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.

Odor	Odorless.
Taste	Not available.
Color	White.

**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).

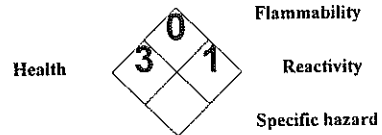
DSCL (EEC)

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.