

# PHOTOGRAPHERS' FORMULARY

## FORMULARY GLYCIN PAPER DEVELOPER 102 (EDWAL 102)

To make 1 liter of stock solution

This excellent, but slow, developer was originally formulated by Edmund Lowe. It yields prints with neutral black tones and delicate gradations.

The developer is unusual in that it employs sodium phosphate as the alkali. One disadvantage of this choice is that a hardening fixer cannot be used because the phosphate and the alum (commonly used as a hardening agent in fixers) form a precipitate in the gelatin of the print. Use only a non-hardening fixer, such as Formulary Fixer 24 (Catalog number 03-0010).

### CHEMICALS CONTAINED IN THIS KIT

Your kit contains the following chemicals:

Chemical	Amount
Sodium sulfite	80 g
Sodium phosphate, tri-basic	120 g
Glycin	25 g
Potassium bromide	3 g

### CHEMICAL SAFETY

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

Sodium Phosphate, tri-basic (tri-sodium phosphate, TSP). Although this chemical is used extensively in households to clean paint off walls, it is a rather dangerous chemical. When mixed into aqueous solution, it reacts with water to release hydroxide ions. Therefore, from a safety standpoint, a solution of tri-basic sodium phosphate is equivalent to a solution of sodium hydroxide. If spilled on the skin and not washed off, the hydroxide will cause a severe chemical burn. This chemical is particularly insidious because the burn will occur without pain. When working with this compound or its solutions, wash your hands frequently. In addition, we strongly urge you to wear rubber gloves and safety glasses.

It is very important that all spills be thoroughly cleaned up. Tri-basic sodium phosphate (and the resultant sodium hydroxide) will not evaporate.

The user assumes all risks upon accepting these chemicals. **IF FOR ANY REASON YOU DO NOT WISH TO ASSUME ALL RISK, PLEASE RETURN THESE CHEMICALS FOR A FULL REFUND.**

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

## MIXING THE STOCK SOLUTION

You will need a 1-liter plastic storage container and a mixing bowl (glass or plastic).

Chemical	Amount
Water (52°C/125°F)	750 ml
Sodium sulfite	80 g
Sodium phosphate, tri-basic	120 g
Glycin	25 g
Potassium bromide	3 g
Water to make	1000 ml

Place the warm water in the mixing bowl and add the sodium sulfite. Stir the solution to dissolve the solid and then add the sodium phosphate. Again stir the solution to dissolve the solid. Add the glycin and stir. When the glycin dissolves, the solution usually turns dark brown. This darkening is characteristic of glycin and does not indicate excessive air oxidation as it does with either metol or hydroquinone. Occasionally the solid glycin contains small lumps, which dissolve slowly. In such a case, crush the lumps against the side of the bowl with the mixing spoon. After the glycin is in solution, add the potassium bromide and, as before, stir to dissolve. Finally, add water to bring the total volume up to 1000 ml; stir to ensure the solution is homogeneous; and then transfer the solution to its storage container.

## FOR BEST RESULTS USE DISTILLED WATER

### Working solution

#### For Chloride or Chlorobromide Papers

Dilute 1 part of the stock solution with 3 parts of water to make the working solution. For example, to make 300 ml of working solution, dilute 75 ml of the stock solution with 225 ml of water; or, to make 500 ml of working solution, dilute 125 ml of the stock solution with 375 ml of water.

With this type of paper, Developer 102 yields brown or sepia prints that have warm-brown tones.

#### For Bromide Papers

Dilute 1 part of the stock solution with 4 parts of water. For example, to make 250 ml of working solution, dilute 50 ml of the stock solution with 200 ml of water; or, to make 500 ml of working solution, dilute 100 ml of the stock solution with 400 ml of water.

With bromide papers, Developer 102 yields pure black prints.

## SHELF-LIFE

The diluted developer has a shorter shelf life than does the stock solution. Since both the diluted developer and the stock solution appear quite dark, the best method to determine exhaustion is to develop a test strip and subjectively evaluate the result.

## Development

Develop the exposed print for 2 to 4 minutes at 200C/680F. Fix, clear, and wash using normal techniques. Use a non-hardening fixer, such as Formulary Fixer 24 (Catalog number 03-0010), to prevent precipitation of the hardener (alum) and the phosphate used as the alkali in this developer.

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MSDS NO: GC003068  
EFFECTIVE DATE: 11/23/92

VAN WATERS & ROGERS INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 001

VERSION: 002

PRODUCT: ~~SODIUM SULFITE~~

ORDER NO: 125715  
PROD NO : 503217

PHOTOGRAPHERS FORMULARY  
C/O UNITED TRUCK LINES  
406-754-2891

MISSOULA , MT 59802

VAN WATERS & ROGERS INC. , SUBSILIARY OF UNIVAR (206)889-3400  
6100 CARILLON POINT , KIRKLAND , WA 98033

EMERGENCY ASSISTANCE

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

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

MSDS #: GC003068

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME): SODIUM SULFITE, SULFTECH(TM) grade Sodium Sulfite

C.A.S. No. 7757-83-7

CHEMICAL NAME AND/OR SYNONYM: Sodium Sulfite

FORMULA: Na<sub>2</sub>SO<sub>3</sub>

MOLECULAR WEIGHT: 126.04

ADDRESS: GENERAL CHEMICAL CORPORATION

90 East Halsey Road

Parsippany, NJ 07054-0389

SEC CONTACT: Manager of Product Safety

SEC PHONE NUMBER: (201) 515-1840

CURRENT ISSUE DATE: July, 1990

B. FIRST AID MEASURES

SEC 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.



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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):



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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.

#### E. 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.

#### F. 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

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

#### G. 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).





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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 55F, "Sodium Sulfite", Oct. 1978.

K. ADDITIONAL INFORMATION

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



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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







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ORDER NO: 112438  
PROD NO : 502290

PHOTOGRAPHERS FORMULARY  
P.O. BOX 950  
HC31 BOX 89

MISSOULA ,MT 59806

VAN WATERS & ROGERS , SUBSIDIARY OF UNIVAR (408)435-8700  
1600 NORTON BUILDING , SEATTLE , WA 98104

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

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

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

-----PRODUCT IDENTIFICATION-----

PRODUCT NAME: POTASSIUM BROMIDE CAS NO.: 7758-02-3  
COMMON NAMES/SYNONYMS: POTASSIUM SALT OF BROMIDE VW&R CODE: P1866

FORMULA: K BR  
HAZARD RATING (NFPA 704 CRITERIA)  
HEALTH: 0  
FIRE: 0  
REACTIVITY: 0  
SPECIAL: NONE

DATE ISSUED: 08/89  
SUPERCEDES: 07/87  
HAZARD RATING SCALE:  
0=MINIMAL 3=SERIOUS  
1=SLIGHT 4=SEVERE  
2=MODERATE

-----HAZARDOUS INGREDIENTS-----

COMPONENT	EXPOSURE LIMITS, MG/M3				HAZARD
	X	OSHA PEL	ACGIH TLV	OTHER LIMIT	
POTASSIUM BROMIDE	>99	NONE	NONE	10(DOW)	NONE

-----PHYSICAL PROPERTIES-----

BOILING POINT, DEG F: 2516 VAPOR PRESSURE, MM HG/20 DEG C: N/A  
MELTING POINT, DEG F: 1346 VAPOR DENSITY (AIR=1): N/A  
SPECIFIC GRAVITY (WATER=1): 2.75 WATER SOLUBILITY, %: 70  
APPEARANCE AND ODOR: EVAPORATION RATE (BUTYL ACETATE=1): N/A  
WHITE CRYSTALLINE SOLID; ODORLESS

-----FIRST AID MEASURES-----





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IF INHALED: REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GET IMMEDIATE MEDICAL ATTENTION.

IN CASE OF EYE CONTACT: IMMEDIATELY FLUSH EYES WITH LOTS OF RUNNING WATER FOR 15 MINUTES, LIFTING THE UPPER AND LOWER EYELIDS OCCASIONALLY. GET IMMEDIATE MEDICAL ATTENTION.

IN CASE OF SKIN CONTACT: IMMEDIATELY WASH SKIN WITH LOTS OF SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND SHOES; WASH BEFORE REUSE. GET MEDICAL ATTENTION IF IRRITATION PERSISTS AFTER WASHING.

IF SWALLOWED: IF CONSCIOUS, IMMEDIATELY INDUCE VOMITING BY GIVING 2 GLASSES OF WATER AND STICKING A FINGER DOWN THE THROAT. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

-----HEALTH HAZARD INFORMATION-----

PRIMARY ROUTES OF EXPOSURE: SKIN OR EYE CONTACT

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: BREATHING DUST MAY IRRITATE THE NOSE AND THROAT AND CAUSE COUGHING AND CHEST DISCOMFORT.

EYE CONTACT: DUSTS MAY IRRITATE THE EYES AND CAUSE SLIGHT TRANSIENT CORNEAL INJURY.

SKIN CONTACT: NO IRRITATION IS LIKELY AFTER BRIEF CONTACT BUT MAY BE IRRITATING OR CAUSE A BURN AFTER PROLONGED CONTACT WITH WET OR ABRADED SKIN.

SWALLOWED: LOW SINGLE DOSE TOXICITY.

CHRONIC EFFECTS OF EXPOSURE: REPEATED EXCESSIVE OVEREXPOSURE MAY CAUSE NAUSEA, VOMITING, MUSCULAR WEAKNESS, INCOORDINATION, DEPRESSION, PSYCHOSIS, ENDOCRINE EFFECTS, DEPRESSION OF THE HEART, ACNEFORM DERMATITIS. BROMISM HAS BEEN REPORTED IN OFFSPRING OF MOTHERS WHO ALSO HAD BROMIDE POISONING AS A RESULT OF INGESTION OF BROMIDES DURING PRENANCY.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE REPORTED.

-----TOXICITY DATA-----

ORAL: NO DATA FOUND

DERMAL: NO DATA FOUND



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INHALATION: NO DATA FOUND

CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM, THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

OTHER DATA: BROMIDE ION HAS BEEN SHOWN TO INTERFERE WITH FERTILITY IN ANIMAL STUDIES.

-----PERSONAL PROTECTION-----

VENTILATION: LOCAL MECHANICAL EXHAUST VENTILATION CAPABLE OF MINIMIZING DUST EMISSIONS AT THE POINT OF USE.

RESPIRATORY PROTECTION: IF USE CONDITIONS GENERATE DUSTS, WEAR A NIOSH-APPROVED RESPIRATOR APPROPRIATE FOR THOSE EMISSION LEVELS. APPROPRIATE RESPIRATORS MAY BE A FULL FACEPIECE OR A HALF MASK AIR-PURIFYING CART-RIDGE RESPIRATOR WITH PARTICULATE FILTERS, A SELF-CONTAINED BREATHING APPARATUS IN THE PRESSURE DEMAND MODE, OR A SUPPLIED-AIR RESPIRATOR. ABSENCE OF ADEQUATE ENVIRONMENTAL CONTROLS AT THE POINT OF USE.

EYE PROTECTION: SAFETY GLASSES WITH SIDE SHIELDS. IT IS GENERALLY RECOGNIZED THAT CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH CHEMICALS BECAUSE CONTACT LENSES MAY CONTRIBUTE TO THE SEVERITY OF AN EYE INJURY.

PROTECTIVE CLOTHING: LONG-SLEEVED SHIRT, TROUSERS, SAFETY SHOES, AND GLOVES.

OTHER PROTECTIVE MEASURES: AN EYEWASH AND SAFETY SHOWER SHOULD BE NEARBY AND READY FOR USE.

-----FIRE AND EXPLOSION INFORMATION-----

FLASH POINT, DEG F: N/A  
METHOD USED: N/A

FLAMMABLE LIMITS IN AIR, %  
LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: THIS MATERIAL IS NOT COMBUSTIBLE. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

SPECIAL FIRE FIGHTING PROCEDURES: FIRE FIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. USE WATER SPRAY TO COOL NEARBY CONTAINERS AND STRUCTURES EXPOSED TO FIRE. CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE.

-----HAZARDOUS REACTIVITY-----



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STABILITY: STABLE POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: NONE

MATERIALS TO AVOID: ACIDS, OXIDIZING MATERIALS.

HAZARDOUS DECOMPOSITION PRODUCTS: WILL LIBERATE TOXIC FUMES OF HYDROGEN BROMIDE AND/OR BROMINE.

-----SPILL, LEAK, AND DISPOSAL PROCEDURES-----

ACTION TO TAKE FOR SPILLS OR LEAKS: WEAR PROTECTIVE EQUIPMENT INCLUDING RUBBER BOOTS, RUBBER GLOVES, RUBBER APRON, AND A FULL FACEPIECE OR A HALF MASK AIR-PURIFYING CARTRIDGE RESPIRATOR WITH PARTICULATE FILTERS. WEAR CHEMICAL GOGGLES IF A HALF MASK IS WORN. FOR SMALL SPILLS, SWEEP UP AND DISPOSE OF IN DOT-APPROVED WASTE CONTAINERS. FOR LARGE SPILLS, SHOVEL INTO DOT-APPROVED WASTE CONTAINERS. KEEP OUT OF SEWERS, STORM DRAINS, SURFACE WATERS, AND SOIL.

COMPLY WITH ALL APPLICABLE GOVERNMENTAL REGULATIONS ON SPILL REPORTING, AND HANDLING AND DISPOSAL OF WASTE.

RUBBER BOOTS, RUBBER GLOVES, RUBBER APRON, AND CHEMICAL GOGGLES. FOR SMALL SPILLS, SWEEP UP AND DISPOSE OF IN DOT-APPROVED WASTE CONTAINERS. FOR LARGE SPILLS, SHOVEL INTO DOT-APPROVED WASTE CONTAINERS.

COMPLY WITH ALL APPLICABLE GOVERNMENTAL REGULATIONS ON SPILL REPORTING, AND HANDLING AND DISPOSAL OF WASTE.

DISPOSAL METHODS: DISPOSE OF CONTAMINATED PRODUCT AND MATERIALS USED IN CLEANING UP SPILLS OR LEAKS IN A MANNER APPROVED FOR THIS MATERIAL. CONSULT APPROPRIATE FEDERAL, STATE AND LOCAL REGULATORY AGENCIES TO ASCERTAIN PROPER DISPOSAL PROCEDURES.

NOTE: EMPTY CONTAINERS CAN HAVE RESIDUES, GASES AND MISTS AND ARE SUBJECT TO PROPER WASTE DISPOSAL, AS ABOVE.

-----SPECIAL PRECAUTIONS-----

STORAGE AND HANDLING PRECAUTIONS: STORE IN A COOL, DRY, WELL-VENTILATED PLACE AWAY FROM INCOMPATIBLE MATERIALS. KEEP BAGS OR FIBER DRUMS DRY AT ALL TIMES. WASH THOROUGHLY AFTER HANDLING. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.

CONTAINERS DRY AT ALL TIMES. WASH THOROUGHLY AFTER HANDLING. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.

REPAIR AND MAINTENANCE PRECAUTIONS: NONE.

OTHER PRECAUTIONS: CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, WILL RETAIN PRODUCT RESIDUE. ALWAYS OBEY HAZARD WARNINGS AND HANDLE EMPTY CONTAINERS AS IF THEY WERE FULL.



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-----REVISION-----

07/87: CORRECTED NFPA REFERENCE AND PHYSICAL DATA. REVISED SKIN CONTACT FIRST AID, PERSONAL PROTECTION, FIRE FIGHTING INFORMATION, DECOMPOSITION PRODUCTS, SPILL AND LEAK PROCEDURES, AND HANDLING ADVICE.

08/89: CHANGED HEADING AND CONTACT INFORMATION.

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

CONTACT: MSDS COORDINATOR                      VW&R SPOKANE OFFICE  
          DURING BUSINESS HOURS, PACIFIC TIME              (408)435-8700

08/02/91 15:29      PRODUCT: 502290      CUST NO: 113365      ORDER NO: 112438

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





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		MANUFACTURER'S NAME AND FSCM (Federal Supply Code for Manufacturers)				EMERGENCY PHONE NO.		
		FMC Corporation 6810				201/541-4171		
		ADDRESS (Number, Street, City, State, and Zip Code) 500 Roosevelt Avenue, Carteret, N. J. 07008						
		CHEMICAL NAME AND SYNONYMS Trisodium Phosphate			TRADE NAME AND SYNONYMS TSP, Trisodium			
		CHEMICAL FAMILY Phosphates		FORMULA Na <sub>3</sub> PO <sub>4</sub>				
		FEDERAL STOCK NUMBER (FSN)	GROSS WEIGHT (LBS)		OUTSIDE PACKAGE DIMENSIONS (Inches)			
		MIL-STD-1341/NATIONAL FIRE PROTECTION ASSOCIATION STD 704M SIGNAL						
		FLAMMABILITY <u>0</u> HEALTH <u>0</u> REACTIVITY <u>0</u> SPECIFIC HAZARD <u>--</u>						
SECTION II - HAZARDOUS INGREDIENTS		PAINTS, PRESERVATIVES, AND SOLVENTS	%	THRESHOLD LIMIT VALUE (Units)	ALLOYS AND METALLIC COATINGS	%	THRESHOLD LIMIT VALUE (Units)	
		PIGMENTS		NA	BASE METAL		NA	
		CATALYST		NA	ALLOYS		NA	
		VEHICLE		NA	METALLIC COATINGS		NA	
		SOLVENTS		NA	FILLER METAL PLUS COATING OR CORE FLUX		NA	
		ADDITIVES		NA	OTHERS		NA	
		OTHERS		NA			NA	
		HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, or GASES					%	THRESHOLD LIMIT VALUE (Units)
								NA
SECTION III - PHYSICAL DATA		BOILING POINT (°F)		--	SPECIFIC GRAVITY (H <sub>2</sub> O = 1)		2.537	
		VAPOR PRESSURE (mmHg.)		NA	PERCENT VOLATILE BY VOLUME (%)		NA	
		VAPOR DENSITY (AIR=1)		NA	EVAPORATION RATE (----- = 1)		0	
		SOLUBILITY IN WATER		Appreciable				
		APPEARANCE AND ODOR White granular powder solid - odorless.						
SECTION IV - FIRE AND EXPLOSION HAZARD DATA		FLASH POINT (Method Used)		FLAMMABLE LIMITS	LOWER EXPLOSIVE LIMIT	UPPER EXPLOSIVE UNIT		
		Non-flammable			Non-flammable			
		EXTINGUISHING MEDIA						
		SPECIAL FIRE FIGHTING PROCEDURES						
		UNUSUAL FIRE AND EXPLOSION HAZARDS						
		NA						



SECTION HEALTH HAZARD DATA	THRESHOLD LIMIT VALUE		
	Unknown		
	EFFECTS OF OVEREXPOSURE		
	Moderate toxicity - strong irritant to eyes.		
SECTION VI REACTIVITY DATA	EMERGENCY AND FIRST AID PROCEDURES		
	Eyes - wash with copious amount of water - call physician.		
	Skin - flush with excessive amount of water.		
	Inhalation - remove from exposure.		
SECTION VII SPILL OR LEAK PROCEDURES	STABILITY	UNSTABLE	CONDITIONS TO AVOID
			Slippery when wet. pH 11.2
		STABLE	X
	INCOMPATIBILITY (Materials to Avoid)		
SECTION VIII SPECIAL PROTECTION INFORMATION	Strong mineral acids.		
	HAZARDOUS DECOMPOSITION PRODUCTS		
	None		
	HAZARDOUS POLYMERIZATION	MAY OCCUR	CONDITIONS TO AVOID
	WILL NOT OCCUR	X	
SECTION IX SPECIAL PRECAUTIONS	STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED		
	For minor spills the material should be swept up and discarded in the general dump. Residue can be washed away with water		
	WASTE DISPOSAL METHOD		
SECTION X TRANS. DATA	Flush to sewer with excessive amount of water.		
	RESPIRATORY PROTECTION (Specify type)		
	U.S. Bureau of Mines approved toxic dust mask.		
	VENTILATION	LOCAL EXHAUST	SPECIAL
No	MECHANICAL (General)	OTHER	
SECTION X TRANS. DATA	PROTECTIVE GLOVES General purpose non-absorbant material		EYE PROTECTION
	OTHER PROTECTIVE EQUIPMENT		Chemical type goggles.
	Full cover clothing.		
SECTION X TRANS. DATA	PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING		
	Store in dry area.		
SECTION X TRANS. DATA	OTHER PRECAUTIONS		
SECTION X TRANS. DATA	PROPER SHIPPING (Article) NAME		DOT CLASSIFICATION
	Trisodium phosphate		Not required
	DOT LABEL	DOT MARKING	EMERGENCY ACCIDENT PRECAUTIONS AND PROCEDURES
	None	None	No special precautions
SECTION X TRANS. DATA	DOT PLACARD	PRECAUTIONS TO BE TAKEN IN TRANSPORTATION	
	None	Keep dry.	

FMC Corporation furnishes the data contained herein in good faith at customer's request without liability or legal responsibility for same whatsoever and no warranty or guarantee, express or implied, is made with respect to such data, nor does FMC grant permission, recommendation, or inducement to infringe any patent whether owned by FMC or others. The data is offered solely for your information and consideration. Since conditions of use are beyond FMC's control, user assumes all responsibility and risk.



9/83

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

Form Approved  
OMB No. 44-RJ387

# 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

OTHER

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





9/83

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

Form Approved  
OMB No. 44-R1387

# MATERIAL SAFETY DATA SHEET

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Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

## SECTION I

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CHEMICAL NAME AND SYNONYMS N-(P-Hydroxyphenyl) (Glycine)		TRADE NAME AND SYNONYMS GLYCIN
CHEMICAL FAMILY Carbolic Acid -alcohol	FORMULA HOC <sub>6</sub> H <sub>4</sub> NHCH <sub>2</sub> 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 (_____ %)	
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)	

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

