

PHOTOGRAPHERS' FORMULARY INC.

PO Box 950 • Condon MT 59826 • 800-922-5255 • FAX 406-754-2896

FORMULARY SILVER INTENSIFIER FOR NEGATIVES

These directions cover two kits: the 1/4-liter kit (Cat. number 05-0070) and the 1/2-liter kit (Cat. number 05-0080).

The chemicals in this kit are used to prepare an -intensifier that is equivalent to Kodak In-5 and DuPont 3-I. The intensifier acts by depositing silver metal on existing silver grains in the emulsion. The amount of new silver deposited is somewhat proportional to the amount of silver originally present in the negative. The intensified image is permanent, has greater contrast than the original negative, and can be toned.

The intensifier is used in room light and the extent of intensification is determined by inspection of the negative as intensification is taking place. After the negative has been intensified sufficiently, it must be fixed and washed.

CHEMICALS CONTAINED IN THIS KIT

Your kit contains the following chemicals:

Chemical	Kit Size	
	1/4 liter	1/2 liter
Silver nitrate	15 grams	30 grams
Sodium sulfite	15 grams	30 grams
Sodium sulfite	3.7 grams	7.5 grams
Sodium thiosulfate, pentahydrate	26 grams	52.5 grams
Sodium thiosulfate, pentahydrate	150 grams	150 grams
Metol	6 grams	12 grams

CHEMICAL SAFETY

All chemicals are cancerous and must be treated with respect. Please read the warning on each package. Two chemicals in this kit need special attention: metol and silver nitrate.

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

Silver nitrate: is both an oxidizer (can supply oxygen to a fire) and a caustic. It can cause skin burns, clean up any spilled solid silver nitrate with water and dispose of any excess down the drain. Never dispose of solid silver nitrate in a wastepaper basket.

If solid silver nitrate comes into contact with the skin, a chemical burn may result. Wash the area with cold water followed by soap and water. Treat any wound in the same manner you would treat a heat burn.

When dilute solutions of silver nitrate are spilled on the skin, a brown to brown-black stain results. The color is due to silver metal bound to the protein of the skin and cannot be washed off. While there are chemical methods for removing these brown stains, the best procedure is to just let them wear off.

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 FOR A FULL REFUND.

MIXING THE SOLUTIONS

Four stock solutions and a fixer will be mixed. The four stock solutions are used to prepare the working solution just prior to use and the fixer is for the after-treatment.



COLUMBUS CHEMICAL INDUSTRIES INC.

P.O. BOX 2
 COLUMBUS, WISCONSIN 53925-0002
 (920) 623-2140
 FAX (920) 623-2577

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)

Silver Nitrate

Note: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.

Section I

Manufacturers /Distributor Address Number Street City State and Zip Code

Columbus Chemical Industries, Inc.

N4335 Temkin Road

Columbus, WI 53925

Emergency Telephone Number

CHEMTREC 1-800-424-9300

Telephone Number for Information

(920) 623-2140

Date Prepared

01/06/2004

Signature of Preparer (optional)

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	CAS #	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Silver Nitrate*	7761-88-8	0.01 mg/m ³ TWA	0.01 mg/m ³ TWA	Not available	>99%

*Subject to the reporting requirements of SARA Title III Section 313.

Section III - Physical/Chemical Characteristics

Boiling Point	Decomposes @ 440 °C (824 °F)	Specific Gravity (H ₂ O = 1)	4.35
Vapor Pressure (mm Hg)	Not available	Melting Point	212 °C (413.6 °F)
Vapor Density (AIR = 1)	5.8	Evaporation Rate (Butyl Acetate = 1)	Not available

Solubility in Water

122 g / 100 cc water @ 0 °C (32 °F)

Appearance and Odor

Colorless to white, odorless crystals.

Section IV Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
Nonflammable		Not applicable	Not applicable

Extinguishing Media

Use extinguishing media appropriate for surrounding fire.

Special Fire Fighting Procedures

Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode.

Unusual Fire and Explosion Hazards

Toxic gas of nitrogen oxides and silver oxides may be produced.

Section V Reactivity Data

Stability	Unstable		Conditions to Avoid	Light, incompatibles, heat
	Stable	X	and oxygen gas.	

Incompatibility Materials to Avoid

Combustible materials, bromine trifluoride and trichloride, calcium carbide, magnesium, phosphine, strong reducing agents.

Hazardous Decomposition or Byproducts

Oxides of nitrogen, silver oxides.

Hazardous Polymerization	May Occur		Conditions to Avoid	Not applicable.
	Will Not Occur	X		

Section VI Health Hazard Data

Routes of Entry	Inhalation ?	Skin ?	Ingestion ?
	X	X	X

Health Hazards (Acute and Chronic)

SKIN: May cause irritation and may be harmful if absorbed. EYE: Causes eye irritation. INHALATION: May be Material is irritating to the mucous membranes and upper respiratory tract. May cause severe irritation. INGESTION: harmful if swallowed. Toxic to lungs and mucous membranes. Acute oral toxicity: LD₅₀ (MOUSE): 50 mg/kg.

Carcinogenicity	NTP	IARC Monographs	OSHA REGULATED?
	Not listed	Not listed	Not listed

Signs and Symptoms of Exposure.

EYES: Reddening, tearing, irritation, blindness. SKIN: Skin rash, pain, burns, reddening, dermatitis, ulcerations. INGESTION: Gastrointestinal pain, diarrhea, nausea, vomiting. INHALATION: Coughing, choking, shortness of breath.

Medical Conditions Generally Aggravated by Exposure: Medical conditions that may be aggravated by exposure to this product include: Conjunctivitis of the eye, dermatitis of the skin, asthma, emphysema and other respiratory diseases.

Emergency and First Aid Procedures: INGESTION: Wash out mouth with water provided person is conscious. DO NOT INDUCE VOMITING. Call a physician immediately. INHALATION: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. SKIN: Flush with water for at least 15 minutes. Remove contaminated clothing; call a physician. EYES: Flush with large amounts of water for at least 15 minutes, lifting lower and upper eyelids.

Section VII Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled: Evacuate area. Wear NIOSH/MSHA-approved respirator, chemical-resistant goggles, rubber boots, apron and rubber gloves. Sweep up, place in a plastic container and hold for waste disposal. Avoid raising dust. Ventilate and wash spill area when complete. Prevent release to environment.

Waste Disposal Method: Dispose in accordance with all applicable Federal, state and local regulations.

Precautions to be Taken in Handling and Storing: Store in a cool, dry, well-ventilated area in tightly-closed, plainly-labelled containers. Store in a corrosion-resistant container. Protect against physical damage, air and light. Maintain adequate ventilation. Wash thoroughly after handling. Do not ingest or breathe dust. Protect exposed tissues.

Other Precautions: Containers, even when empty, will retain residue and vapors. Always obey hazard warnings and handle empty containers as if they were full. Do not store near combustible materials.

Section VII Control Measures

Respiratory Protection (Specify Type): NIOSH/MSHA-approved respirator with dust/mist cartridge.

Ventilation	Local Exhaust	Necessary.	Special	Eyewash nearby.
	Mechanical (General)	Recommended.	Other	Safety shower nearby.

Protective Gloves: Appropriate chemical-resistant gloves. Eye Protection: safety goggles

Other Protective Clothing or Equipment: Lab coat or apron, boots.

Work /Hygienic Practices: Contact lenses should not be worn when working with this material. Wash exposed areas thoroughly after handling. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Do not ingest or breathe dust. Wash contaminated clothing before reuse. Wash hands prior to eating or smoking.

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**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:** Na₂SO₃ + 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 ³ *
Cobalt Sulfate (as Co)	10124-43-3		TLV = 0.05 mg/m ³ * PEL = 0.1 mg/m ³

*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
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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.

REPORT NUMBER: 703
MSDS NO: MZ55230
MAINFRAME UPLOAD DATE: 03/30/05

UNIVAR USA INC.
MATERIAL SAFETY DATA SHEET

PAGE: 001
VERSION: 004

PRODUCT: SODIUM THIOSULFATE

ORDER NO: 231068
PROD NO : 503233

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

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 NAME: SODIUM THIOSULFATE
MSDS NUMBER: MZ55230
DATE ISSUED: 3/21/2005
SUPERSEDES: 5/22/2002
ISSUED BY: 008614

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SODIUM THIOSULFATE

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1. PRODUCT IDENTIFICATION

SYNONYMS: SODIUM THIOSULFATE, PENTAHYDRATE; THIOSULFURIC ACID,
DISODIUM SALT, PENTAHYDRATE
CAS NO: 7772-98-7 (ANHYDROUS) 10102-17-7 (PENTAHYDRATE)
MOLECULAR WEIGHT: 248.17
CHEMICAL FORMULA: NA2S2O3.5H2O

Distributed by:
Univar USA Inc.
6100 Carillon Point
Kirkland, WA 98033

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UNIVAR USA INC.

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PRODUCT: SODIUM THIOSULFATE

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PROD NO : 503233

425-889-3400

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO	PERCENT	HAZARDOUS
SODIUM THIOSULFATE	7772-98-7	100%	YES

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

POTENTIAL HEALTH EFFECTS

INHALATION:

MAY CAUSE IRRITATION TO THE RESPIRATORY TRACT. SYMPTOMS MAY INCLUDE COUGHING AND SHORTNESS OF BREATH.

INGESTION:

LOW LEVEL OF TOXICITY BY INGESTION. DIARRHEA MAY OCCUR BY INGESTION OF LARGE QUANTITIES.

SKIN CONTACT:

IRRITATION MAY OCCUR FROM PROLONGED SKIN CONTACT.

EYE CONTACT:

CONTACT MAY CAUSE MECHANICAL IRRITATION.

CHRONIC EXPOSURE:

CHRONIC EXPOSURE MAY CAUSE SKIN EFFECTS.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

NO INFORMATION FOUND.

4. FIRST AID MEASURES

INHALATION:

REMOVE TO FRESH AIR. GET MEDICAL ATTENTION FOR ANY BREATHING DIFFICULTY.

PRODUCT: SODIUM THIOSULFATE

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INGESTION:

INDUCE VOMITING IMMEDIATELY AS DIRECTED BY MEDICAL PERSONNEL. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION.

SKIN CONTACT:

WASH EXPOSED AREA WITH SOAP AND WATER. GET MEDICAL ADVICE IF IRRITATION DEVELOPS.

EYE CONTACT:

WASH THOROUGHLY WITH RUNNING WATER. GET MEDICAL ADVICE IF IRRITATION DEVELOPS.

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5. FIRE FIGHTING MEASURES

FIRE:

NOT CONSIDERED TO BE A FIRE HAZARD.

EXPLOSION:

NOT CONSIDERED TO BE AN EXPLOSION HAZARD.

FIRE EXTINGUISHING MEDIA:

USE ANY MEANS SUITABLE FOR EXTINGUISHING SURROUNDING FIRE.

SPECIAL INFORMATION:

USE PROTECTIVE CLOTHING AND BREATHING EQUIPMENT APPROPRIATE FOR THE SURROUNDING FIRE.

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6. ACCIDENTAL RELEASE MEASURES

VENTILATE AREA OF LEAK OR SPILL. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AS SPECIFIED IN SECTION 8. SPILLS: SWEEP UP AND CONTAINERIZE FOR RECLAMATION OR DISPOSAL. VACUUMING OR WET SWEEPING MAY BE USED TO AVOID DUST DISPERSAL.

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7. HANDLING AND STORAGE

KEEP IN A TIGHTLY CLOSED CONTAINER, STORED IN A COOL, DRY, VENTILATED AREA. PROTECT AGAINST PHYSICAL DAMAGE. ISOLATE FROM INCOMPATIBLE SUBSTANCES. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES (DUST, SOLIDS); OBSERVE ALL WARNINGS AND PRECAUTIONS LISTED FOR THE PRODUCT.

PRODUCT: SODIUM THIOSULFATE

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS:
NONE ESTABLISHED.

VENTILATION SYSTEM:

IN GENERAL, DILUTION VENTILATION IS A SATISFACTORY HEALTH HAZARD CONTROL FOR THIS SUBSTANCE. HOWEVER, IF CONDITIONS OF USE CREATE DISCOMFORT TO THE WORKER, A LOCAL EXHAUST SYSTEM SHOULD BE CONSIDERED.

PERSONAL RESPIRATORS (NIOSH APPROVED):

FOR CONDITIONS OF USE WHERE EXPOSURE TO DUST OR MIST IS APPARENT AND ENGINEERING CONTROLS ARE NOT FEASIBLE, A PARTICULATE RESPIRATOR (NIOSH TYPE N95 OR BETTER FILTERS) MAY BE WORN. IF OIL PARTICLES (E.G. LUBRICANTS, CUTTING FLUIDS, GLYCERINE, ETC.) ARE PRESENT, USE A NIOSH TYPE R OR P FILTER. FOR EMERGENCIES OR INSTANCES WHERE THE EXPOSURE LEVELS ARE NOT KNOWN, USE A FULL-FACE POSITIVE-PRESSURE, AIR-SUPPLIED RESPIRATOR.

WARNING: AIR-PURIFYING RESPIRATORS DO NOT PROTECT WORKERS IN OXYGEN-DEFICIENT ATMOSPHERES.

SKIN PROTECTION:

WEAR PROTECTIVE GLOVES AND CLEAN BODY-COVERING CLOTHING.

EYE PROTECTION:

SAFETY GLASSES. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

MONOCLINIC, COLORLESS CRYSTALS.

BOILING POINT:

> 100C (> 212F)

ODOR:

ODORLESS.

MELTING POINT:

48C (118F) LOSES WATER @ 100C (212F)

SOLUBILITY:

796/100 ML WATER @ 4C (39F)

VAPOR DENSITY (AIR=1):

NO INFORMATION FOUND.

DENSITY:

1.75

VAPOR PRESSURE (MM HG):

NO INFORMATION FOUND.

PH:

NO INFORMATION FOUND.

EVAPORATION RATE (BUAC=1):

NO INFORMATION FOUND.

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% VOLATILES BY VOLUME @ 21C (70F);

0

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10. STABILITY AND REACTIVITY

STABILITY:

STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE. STABILITY LIMITED IN SOLUTION.

HAZARDOUS DECOMPOSITION PRODUCTS:

OXIDES OF SULFUR AND HYDROGEN SULFIDE.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

INCOMPATIBILITIES:

SODIUM NITRATE, HALOGENS, AND OXIDIZING AGENTS. REACTS WITH ACIDS TO RELEASE SULFUR DIOXIDE.

CONDITIONS TO AVOID:

INCOMPATIBLES.

11. TOXICOLOGICAL INFORMATION

NO L050/LC50 INFORMATION FOUND RELATING TO NORMAL ROUTES OF OCCUPATIONAL EXPOSURE.

-----\CANCER LISTS\-----

INGREDIENT	---NTP CARCINOGEN---		IARC CATEGORY
	KNOWN	ANTICIPATED	
SODIUM THIOSULFATE (7772-98-7)	NO	NO	NONE

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

NO INFORMATION FOUND.

ENVIRONMENTAL TOXICITY:

NO INFORMATION FOUND.

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13. DISPOSAL CONSIDERATIONS

WHATEVER CANNOT BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE MANAGED IN AN APPROPRIATE AND APPROVED WASTE DISPOSAL FACILITY. PROCESSING, USE OR CONTAMINATION OF THIS PRODUCT MAY CHANGE THE WASTE MANAGEMENT OPTIONS. STATE AND LOCAL DISPOSAL REGULATIONS MAY DIFFER FROM FEDERAL DISPOSAL REGULATIONS.

DISPOSE OF CONTAINER AND UNUSED CONTENTS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS.

14. TRANSPORT INFORMATION

NOT REGULATED.

15. REGULATORY INFORMATION

-----\CHEMICAL INVENTORY STATUS - PART 1\-----
INGREDIENT TSCA EC JAPAN AUSTRALIA

SODIUM THIOSULFATE (7772-98-7) YES YES YES YES

-----\CHEMICAL INVENTORY STATUS - PART 2\-----
INGREDIENT --CANADA--
KOREA DSL NOSL PHIL.

SODIUM THIOSULFATE (7772-98-7) YES YES NO YES

-----\FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 1\-----
INGREDIENT -SARA 302- -----SARA 313-----
RQ TPQ LIST CHEMICAL CATG

SODIUM THIOSULFATE (7772-98-7) NO NO NO NO

-----\FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 2\-----
INGREDIENT -RCRA- -TSCA-
CERCLA 261.33 8(B)

SODIUM THIOSULFATE (7772-98-7) NO NO NO

CHEMICAL WEAPONS CONVENTION: NO TSCA 12(B): NO CBTA: NO

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PRODUCT: SODIUM THIOSULFATE

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SARA 311/312: ACUTE: YES CHRONIC: NO FIRE: NO PRESSURE: NO
REACTIVITY: NO (PURE / SOLID)

AUSTRALIAN HAZCHEM CODE: NONE ALLOCATED.
POISON SCHEDULE: NONE ALLOCATED.

WHMIS: THIS MSDS HAS BEEN PREPARED ACCORDING TO THE HAZARD CRITERIA OF
THE CONTROLLED PRODUCTS REGULATIONS (CPR) AND THE MSDS CONTAINS
ALL OF THE INFORMATION REQUIRED BY THE CPR.

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16. OTHER INFORMATION

NFPA RATINGS:

HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

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

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

04/25/05 15:42 PRODUCT: 503233 CUST NO: 113365 ORDER NO: 231068

----- NOTICE -----

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

CONSEQUENTIAL DAMAGES. **

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PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT
SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM
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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.

*** END OF MSDS ***

10-0710

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

SECTION – I, CHEMICAL IDENTIFICATION

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

SECTION – II, HAZARDS IDENTIFICATION

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

Continue on page....2

(2)

SECTION – III, FIRST-AID MEASURES

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

SECTION – IV, FIRE FIGHTING MEASURES

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

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SECTION – V, ACCIDENTAL RELEASE MEASURES

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

SECTION – VI, SAFE HANDLING / PERSONAL PROTECTION

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

SECTION – VII, PHYSICAL AND CHEMICAL PROPERTIES

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

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SECTION -VIII, STABILITY AND REACTIVITY

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

- HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

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

SECTION -IX, TOXICOLOGICAL INFORMATION

ACUTE EFFECTS

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

SECTION -X, OTHER INFORMATION

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