Catalog number 06-0240

FORMULARY TONER-FIXER FOR POP

1-liter kit

These directions assume the user is familiar with the Formulary instruction for Printing-Out-Paper (POP) (Catalog number 07-0110). The chemicals in this kit are intended to replace both the toner and the fixer of the standard POP process. Care must be used with this combined treatment to ensure complete fixing has taken place.

CHEMICALS CONTAINED IN THIS KIT

Your kit contains the following chemicals:

<u>Chemical</u>	Amount			
sodium thiosulfate, pentahydrate gold chloride, 1% solution	120 g 30 ml			

CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read the warning on each package. This kit contains one chemical that needs special attention: gold chloride.

Gold chloride is a caustic and can cause skin burns. In dilute solution, gold chloride will stain the skin purple. The stain is due to gold metal bonded to the protein of the skin and cannot be chemically removed. The only procedure for removing these spots is to 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 WORKING SOLUTION

You will need a 1-liter storage container and a mixing bowl.

<u>Chemical</u>	Amount
water (52°C/68°F) sodium thiosulfate, pentahydrate gold chloride, 1% solution water to make	900 ml 120 g 30 ml 1000 ml

:				
; ;	,			
1				

107360/107310

REPORT NUMBER: 703 MSDS NO: MZS5230 UNIVAR USA INC.

PAGE: 001

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 03/30/05

VERSION: 004

PRODUCT: SODIUM THIOSULFATE

ORDER NO: 231048 PROD NO: 503233

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

UNIVAR USA INC.

6100 CARILLON POINT , KIRKLAND

(425)889-3400.

, WA 98033

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

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

PRODUCT NAME:

SODIUM THIOSULFATE

MSDS NUMBER:

MZS5230

DATE ISSUED:

3/21/2005

SUPERSEDES:

5/22/2002

ISSUED BY:

008614

SODIUM THIOSULFATE

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: NA2S203.5H20

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

UNIVAR USA INC.

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 03/30/05

PAGE: 002

VERSION: 004

PRODUCT: SODIUM THIOSULFATE

ORDER NO: 231068 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.

UNIVAR USA INC.

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 03/30/05

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PRODUCT: SODIUM THIOSULFATE

ORDER NO: 231068 PROD NO: 503233

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 THUROUGHLY WITH RUNNING WATER. GET MEDICAL ADVICE IF IRRITATION DEVELOPS.

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.

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.

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.

UNIVAR USA INC.

MATERIAL SAFETY DATA SHEET

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PAGE: 004

VERSION: 004

PRODUCT: SODIUM THIOSULFATE

ORDER NO: 231048 PROD NO: 503233

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

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE :-

BOILING POINT:

MONOCLINIC, COLORLESS CRYSTALS,

→ 100C (> 212F)

ODOR:

MELTING POINT:

ODORLESS.

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

SOLUBILITY:

79G/100 ML WATER @ 4C (39F)

VAPOR DENSITY (AIR=1): NO INFORMATION FOUND.

DENSITY:

1,75

VAPOR PRESSURE (MM HG): NO INFORMATION FOUND.

EVAPORATION RATE (BUAC=1):

NO INFORMATION FOUND.

NO INFORMATION FOUND.

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UNIVAR USA INC.

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MATERIAL SAFETY DATA SHEET

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VERSION: 004

PRODUCT: SODIUM THIOSULFATE

ORDER NO: 231068 PROD NO : 503233

🔭 X VOLATILES BY VOLUME @ 21C (70F): 🎋 🦠

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 LOSO/LCSO INFORMATION FOUND RELATING TO NORMAL ROUTES OF OCCUPATIONAL EXPOSURE.

-----\CANCER LISTS\--------NTP CARCINOGEN---INGREDIENT KNOWK ANTICIPATED IARC CATEGORY SODIUM THIOSULFATE (7772-98-7) NO NONE

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE: NO INFORMATION FOUND,

ENVIRONMENTAL TOXICITY: NO INFORMATION FOUND,

UNIVAR USA INC.

MATERIAL SAFETY DATA SHEET

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PRODUCT: SODIUM THIOSULFATE

ORDER NO: 231068 PROD NO: 503233

COTA: NO

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 -----\CHEMICAL INVENTORY STATUS - PART 2\-------CANADA--INGREDIENT KOREA DSL NOSL PHIL. NO -SODIUM THIOSULFATE (7772-98-7) YES YES -----\FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 1\------SARA 302-----SARA 313----LIST CHEMICAL CATG INGREDIENT RQ TPQ SODIUM THIOSULFATE (7772-98-7) -RCRA- -TSCA-261.33 8(0) INGREDIENT CERCLA SODIUM THIOSULFATE (7772-98-7) ΝĐ

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

REPORT NUMBER: 703

UNIVAR USA INC.

MSDS NO: MZS5230 MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 03/30/05

PAGE: 007

VERSION: 004

PRODUCT: SODIUM THIOSULFATE

ORDER NO: 231068 PROD NO : 503233

SARA 311/312: ACUTE: YES CHRONIC: NO FIRE: NO

PRESSURE: NO

REACTIVITY: NO (PURE / SQLID) /

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.

16. OTHER INFORMATION

NFPA RATINGS:

HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

REPORT NUMBER: 703 UNIVAR USA INC. MSDS NO: MZS5230

MATERIAL SAFETY DATA SHEET

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ORDER NO: 231068

PRODUCT: SODIUM THIOSULFATE

PROD NO : 503233 ------ FOR ADDITIONAL INFORMATION ------CONTACT: MSBS 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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SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

Date Printed: 06/17/2004 Date Updated: 03/10/2004

Version 1.2

Section 1 - Product and Company Information

Product Name GOLD(I) CHLORIDE, 99.9%

Product Number 481130
Brand ALDRICH

Company Sigma-Aldrich

Street Address 3050 Spruce Street

City, State, Zip, Country SAINT LOUIS MO 63103 US

Technical Phone: 314 771 5765

Emergency Phone: 414 273 3850 Ext. 5996

'ax: 800 325 5052

Section 2 - Composition/Information on Ingredient

 Substance Name
 CAS #
 SARA 313

 GOLD(I) CHLORIDE, 99.9%
 10294-29-8
 No

Formula AuCl

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Corrosive.

Causes burns. May cause sensitization by skin contact.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

EYE EXPOSURE

Assure adequate flushing of the eyes by separating the eyelids with fingers.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Dry chemical powder.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

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.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid inhalation. Do not get in eyes, on skin, on clothing.

STORAGE

Suitable: Keep tightly closed. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing. Faceshield (8-inch minimum).

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	N/A				
Property	Value	At 1	Temperature	or	Pressure
Molecular Weight pH BP/BP Range MP/MP Range Freezing Point Vapor Pressure Vapor Density Saturated Vapor Conc. SG/Density Bulk Density	232.42 AMU N/A N/A 289 °C N/A N/A N/A N/A N/A N/A				

Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Decomposes on heating to chlorine gas, hydrogen chloride and metallic gold.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Multiple Routes: May be harmful by inhalation, ingestion, or skin absorption.

SENSITIZATION

Skin: May cause allergic skin reaction.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynxand bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure can cause stomatitis, metallic taste, itching, erythema, eczema, erythema multiforme, exfoliative dermatitis, thrombocytopenia, leucopenia, agranulocytosis, and aplastic anemia. Exposure can also cause a gray-to-blue pigmentation (chrysiasis) in the skin and mucous membranes, especially in areas exposed to light. Gold deposits may occur in the eyes causing keratitis and corneal ulceration.

Section 12 - Ecological Information

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION Catalysts and expensive metals should be recovered for reuse or recycling. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Corrosive solid, acidic,

inorganic, n.o.s.

UN#: 3260 Class: 8

Packing Group: Packing Group II

Hazard Label: Corrosive

PIH: Not PIH

ATAI

Proper Shipping Name: Corrosive solid, acidic,

inorganic, n.o.s.
IATA UN Number: 3260
Hazard Class: 8
Packing Group: II

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: C

Indication of Danger: Corrosive.

R: 34 43

Risk Statements: Causes burns. May cause sensitization by skin contact.

S: 26 27 36/37/39 45

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Corrosive.

Risk Statements: Causes burns. May cause sensitization by skin contact.

Safety Statements: 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. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.

UNITED STATES REGULATORY INFORMATION SARA LISTED: No

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., 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 additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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