

PHOTOGRAPHERS' FORMULARY

FORMULARY BEUTLER HIGH ACUTANCE FILM DEVELOPER (Neofin Blue formula)

Formulary Beutler High Acutance Film Developer is a compensating developer that gives excellent sharpness, medium grain, and low contrast. With 200 ASA or slower films, a high degree of enlargement is possible.

Compensation and lower contrast is achieved because more bromide is released in the highlights than in the shadows. The excess bromide in the highlights slows their development relative to the shadow areas where the development continues and brings out the fine details. The net effect is an increase in shadow detail and a decrease in the overall contrast of the negative.

Mackie line is a fine black line around the highlights. These fine lines result from the bromide spreading around the highlight. At the edge of the highlight, the concentration of bromide on the shadow side of the edge causes abnormal restraint. Consequently, the edge of the highlight becomes very well defined.

This metol-based developer is very economical. The chemicals contained in this kit are used to make 2 stock solutions, which are diluted to make 12 liters of working solution.

FOR YOUR CHEMICAL SAFETY

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

Some individuals become sensitized (develop allergic symptoms or rashes) when using metol. Please pay special attention to the warning on this package.

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 30 DAYS FOR A FULL REFUND.

MIXING THE STOCK SOLUTIONS

Two stock solutions are prepared and just prior to use, a portion of each is mixed with water to obtain the working solution.

You will need one dark brown bottle with a capacity of one liter to store Stock Solution A, and a glass or plastic one liter storage container for Stock Solution B. We recommend you wear rubber gloves, splash goggles, dust mask and a rubber apron whenever you are mixing dry chemicals.

Stock Solution A

Chemical	Amount
Water (48° C/120° F)	750 ml
Metol	10 g
Sodium sulfite	50 g
Cold water to make	1000 ml

Place the warm water in the storage container. Add a pinch of sodium sulfite. (this amount of sodium sulfite retards the initial oxidation of the metol. If more sulfite is added, the metol will not dissolve.) Add the metol and stir well until all of the metol dissolves. Add each chemical in order making sure each has dissolved completely before adding the next. Finally add cold water to bring

the total volume up to 1000 ml. Be sure to stir the solution after adding the final portion of water to ensure that it is mixed thoroughly.

Stock Solution B

Chemical	Amount
water (48° C/120° F)	750 ml
sodium carbonate, monohydrate	58g
cold water to make	1000 ml

Place the warm water in the storage container. Add the sodium carbonate and stir until the solid disappears. Add cold water to bring the final volume up to 1000 ml. Stir the solution to make sure it is mixed thoroughly.

LIFE OF THE SOLUTIONS

The shelf life of both stock solutions is 6 months if the storage container is full and tightly capped.

MIXING THE WORKING SOLUTION:

You will need a graduated cylinder to mix the working solution. All solutions should be at 20° C/68° F for both mixing and development.

To prepare the working solution, mix one part Stock Solution A with one part Stock Solution B and ten (10) parts water.

Stock Solution A	40 ml	100 ml
Stock Solution B	40 ml	100 ml
water	400 ml	1000 ml
Final volume of working solution	480 ml	1200 ml

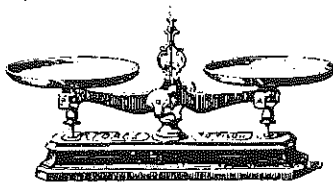
USING THE DEVELOPER

The actual development time varies with individual taste and film type and should be determined by testing. In general, slow films require less development while fast films require longer development.

Agitation is variable with this developer for you to tailor development to your specific needs. More time allowed between agitation results in more compensation and increased sharpness.

Too much time between agitation results in uneven development. Run careful tests to find the agitation pattern best suited for your application.

We recommend a development time of 8-15 minutes at 20° C/68° F, using your normal development sequence.



PHOTOGRAPHERS' FORMULARY INC.

P.O. Box 950 • Condon MT 59826 • 406-754-2891 • FAX 406-754-2896
E-MAIL formulary@montana.com

10-1340

PT NUMBER: 703
NO: GC003068
EFFECTIVE DATE: 11/23/92

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 001
VERSION: 002

PRODUCT: SODIUM SULFITE

ORDER NO: 141120
PROD NO : 503217

PHOTOGRAPHERS FORMULARY
C/O UNITED FRT. TERMINAL

KALISPELL ,MT 59606

VAN WATERS & ROGERS INC. , SUBSIDIARY OF UNIVAR (206)889-3400
C/O 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

MS #: GC003068

GENERAL INFORMATION

TRADE NAME (COMMON NAME): SODIUM SULFITE, SULFTECH(TM) grade Sodium Sulfite
U.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
CONTACT: Manager of Product Safety
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.

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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.

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 SO₂ = 2 ppm
OSHA/STEL for SO₂ = 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.

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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SUBJECT: SODIUM SULFITE

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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.)

ADDITIONAL: 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.

HAIR, 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

APPEARANCE AND ODOR: SOLID

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

MELTING POINT: Decomposes 900 Degrees C

BOILING POINT: ND

SPECIFIC GRAVITY (H2O=1): 2.63

AIR 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

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

REACTIVITY DATA

STABILITY: STABLE

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

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

ACIDS release sulfur dioxide gas (details below).

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PRODUCT: SODIUM SULFITE

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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

HAZARDOUS INGREDIENTS (Mixtures Only)

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

ENVIRONMENTAL

BIODEGRADABILITY/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: NO

PA 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 SO2 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)

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.

ADDITIONAL INFORMATION

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

10-1190

FEB 13 1996

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EFFECTIVE DATE: 01/10/91

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 001
VERSION: 007

PRODUCT: SODIUM CARBONATE

ORDER NO: 151211
PROD NO : 628695

PHOTOGRAPHERS FORMULARY
C/O TNT UNITED DOCK

MISSOULA , MT 59806

VAN WATERS & ROGERS INC. , SUBSIDIARY OF UNIVAR (206)887-3400
6100 CARILLON POINT , KIRKLAND , WA 98033

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

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

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

PRODUCT NAME: SODIUM CARBONATE CAS NO.: 5968-11-6 (MONOHYDRATE)
497-19-8 (ANHYDROUS)
6132-02-1(DECAHYDRATE)

COMMON NAMES/SYNONYMS: DISODIUM CARBONATE; SODA ASH MSDS #: P1127
CONSAL; SODIUM CARBONATE DECAHYDRATE

FORMULA: NA2 CO3; NA2 CO3. 10H2O (DECAHYDRATE) DATE ISSUED: 01/91

MOLECULAR WEIGHT: 105.99; 286 DECAHYDRATE SUPERCEDES: 10/90

NFPA RATING (MANUFACTURER)

HMIS RATING

HEALTH: 2	HAZARD RATING SCALE	HEALTH: 1
FIRE: 0	0=MINIMAL 3=SERIOUS	FIRE: 0
REACTIVITY: 0	1=SLIGHT 4=SEVERE	REACTIVITY: 0
SPECIAL: NONE	2=MODERATE	

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

EXPOSURE LIMITS, PPM

COMPONENT	CAS NO.	%	OSHA ACGIH OTHER			HAZARD
			PEL	TLV	LIMIT	

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SODIUM CARBONATE (497-19-8) 99 NONE NONE NONE IRRITANT

NOTE: SYNONYM FOR CONSAL IS SODIUM CARBONATE DECAHYDRATE

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

BOILING POINT, DEG F: DECOMPOSES

MELTING POINT, DEG F: 1564

SPECIFIC GRAVITY (WATER=1): 2.25 - 2.53; 1.44 (DECAHYDRATE)

VAPOR PRESSURE, MM HG: NOT APPLICABLE pH: 11.3 (1% SOLUTION)

VAPOR DENSITY (AIR=1): NOT APPLICABLE WATER SOLUBILITY %: 33.2% WT

EVAPORATION RATE (BUTYL ACETATE = 1): NOT APPLICABLE

% VOLATILE (BY VOLUME): NOT APPLICABLE

APPEARANCE AND ODOR: WHITE ODORLESS POWDER OR GRANULES.

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

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: DO NOT INDUCE VOMITING. IF CONSCIOUS, GIVE LOTS OF WATER OR MILK. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

NOTES TO PHYSICIAN: NONE

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

PRIMARY ROUTES OF EXPOSURE: INHALATION, SKIN OR EYE CONTACT.

SIGNS AND SYMPTOMS OF EXPOSURE

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PROD NO : 628675

INHALATION: BREATHING DUST MAY IRRITATE THE NOSE AND THROAT AND CAUSE COUGHING AND CHEST DISCOMFORT. EXCESSIVE CONTACT CAN CAUSE DAMAGE TO THE NASAL SEPTUM.

EYE CONTACT: DUSTS WILL IRRITATE THE EYES AND PROLONGED CONTACT MAY DAMAGE THE EYES.

SKIN CONTACT: PROLONGED OR REPEATED CONTACT WITH THE DUST MAY IRRITATE THE SKIN WITH BLISTERING AND REDNESS, SOLUTIONS MAY CAUSE SEVERE IRRITATION OR BURNS.

SWALLOWED: SWALLOWING LARGE QUANTITIES MAY CAUSE NAUSEA, VOMITING, ABDOMINAL PAIN, DIARRHEA AND COLLAPSE.

CHRONIC EFFECTS OF EXPOSURE: MAY CAUSE SENSITIZATION.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE REPORTED.

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

ORAL: RATS LD50 = 4 G/KG

DERMAL: RABBITS 500 MG/24 HR; MODERATE IRRITATION

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: NONE

-----ECOLOGICAL INFORMATION SECTION-----

NO DATA FOUND

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

VENTILATION: LOCAL MECHANICAL EXHAUST VENTILATION CAPABLE OF MAINTAINING 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 CARTRIDGE RESPIRATOR WITH PARTICULATE FILTERS, A SELF-CONTAINED BREATHING APPARATUS IN THE PRESSURE DEMAND MODE, OR A SUPPLIED-AIR RESPIRATOR.

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EYE PROTECTION: CHEMICAL GOGGLES AND FULL FACE SHIELD. 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, RUBBER
GLOVES, AND RUBBER APRON.

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

AUTOIGNITION TEMPERATURE, DEG. F: NO DATA FOUND

EXTINGUISHING MEDIA: USE WATER SPRAY, DRY CHEMICAL, CO2, OR ALCOHOL
FOAM.

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.

UNUSUAL FIRE AND EXPLOSION HAZARDS: EXTINGUISH ALL NEARBY SOURCES OF
IGNITION.

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

STABILITY: STABLE POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: EXCESSIVE HEAT AND CONTAMINATION OF ANY KIND.

MATERIALS TO AVOID: ACIDS, OXIDES OF PHOSPHOROUS, ZINC, LITHIUM, FLUORINE,
CALCIUM HYDROXIDE, ALUMINUM AND 2,4,6-TRINITROTOLUENE. CONTACT WITH ACIDS
WILL RELEASE CARBON DIOXIDE GAS. WHEN MIXED WITH LIME DUST AND WATER,
CORROSIVE CAUSTIC SODA MAY BE PRODUCED.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY LIBERATE CARBON MONOXIDE OR
CARBON DIOXIDE AND OXIDES OF SODIUM.

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

ACTION TO TAKE FOR SPILLS OR LEAKS: WEAR PROTECTIVE EQUIPMENT INCLUDING
RUBBER BOOTS, RUBBER GLOVES, RUBBER APRON, AND A SELF-CONTAINED
BREATHING APPARATUS IN THE PRESSURE DEMAND MODE OR A SUPPLIED-AIR

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RESPIRATOR. IF THE SPILL OR LEAK IS SMALL, A FULL FACEPIECE AIR-PURIFYING CARTRIDGE RESPIRATOR EQUIPPED WITH PARTICULATE FILTERS MAY BE SATISFACTORY. IN ANY EVENT, ALWAYS WEAR EYE PROTECTION. 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.

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. AVOID EYE CONTACT OR PROLONGED SKIN CONTACT. AVOID BREATHING DUST. WHEN DISSOLVING, ADD TO WATER CAUTIOUSLY AND WITH STIRRING; SOLUTIONS CAN GET HOT.

REPAIR AND MAINTENANCE PRECAUTIONS: NONE.

OTHER PRECAUTIONS: CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, WILL RETAIN PRODUCT RESIDUE AND VAPORS. ALWAYS OBEY HAZARD WARNINGS AND HANDLE EMPTY CONTAINERS AS IF THEY WERE FULL. AVOID SIMULTANEOUS EXPOSURE TO SODA ASH AND LIME DUST. IN THE PRESENCE OF MOISTURE THE TWO MATERIALS COMBINE TO FORM CAUSTIC SODA (NaOH), WHICH MAY CAUSE BURNS.

-----OTHER REGULATORY INFORMATION-----

SECTION 313: NONE

PROPOSITION 65: SEE BELOW

SECTION 313 & PROP. 65: SEE BELOW

SECTION 313 (WITH CHEMICALS LISTED): NONE

PROPOSITION 65 (WITH CHEMICALS LISTED): THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) CONSIDERED BY THE STATE OF CALIFORNIA'S SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65) AS CAUSING CANCER OR REPRODUCTIVE TOXICITY AND FOR WHICH WARNINGS ARE NOW REQUIRED:

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VAN WATERS & ROGERS INC.
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PRODUCT: SODIUM CARBONATE

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PROD NO : 628695

CHEMICALS	CAS NO.	% WT
ARSENIC	7440-38-2	< .03 PPM
CHROMIUM	7440-47-3	< .03 PPM
LEAD	7439-92-1	<1.00 PPM

MASSACHUSETTS: NONE

PENNSYLVANIA: NONE

CALIFORNIA SCAQMD: NONE

TSCA: THE INGREDIENTS OF THIS PRODUCT ARE ON THE TSCA INVENTORY.

-----REVISIONS-----

07/89: ADDED OTHER REGULATORY INFORMATION.

08/89: CHANGED HEADING AND CONTACT INFORMATION.

04/90: ADDED MOLECULAR WEIGHT, HHS RATING, NOTES TO PHYSICIAN,
AUTOIGNITION TEMPERATURE, PH, % VOLATILE, ECOLOGICAL INFORMATION, OTHER
REGULATORY INFORMATION EXCEPT PROP. 65 (WITH CHEMICALS LISTED), CALIFORNIA
SCAQMD & TSCA.

04/90: REVISED MATERIALS TO AVOID, STORAGE AND HANDLING & OTHER
PRECAUTIONS.

10/90: ADDED: OTHER REGULATORY INFORMATION 1,2,3,4,

REVISED: VENTILATION

01/91: ADDED: CAS. NO., SYNONYM, FORMULAS, MOLECULAR WEIGHT, NOTE-TO
HAZARDOUS INGREDIENTS, SPECIFIC GRAVITY

10-070



Material Safety Data Sheet

NFPA	HMIS		Personal Protective Equipment
	Health Hazard	(2)	 See Section 15.
Fire Hazard	(1)		
Reactivity	(0)		

Section 1. Chemical Product and Company Identification			
Common Name/ Trade Name	METOL	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	In case of emergency	
Chemical Name		CHEMTREC (24hr) 800-424-9300	
Chemical Family	Not available.	Emergency phone: (310) 516-8000	
Chemical Formula	C14H20N2O6S		
Supplier	SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, CA 90248-9985		

Section 2. Composition and Information on Ingredients					
			Exposure Limits		
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.

Products of Combustion	These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂ ...).
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 ₂ , 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;

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, CO2), nitrogen oxides (NO, NO2...).

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

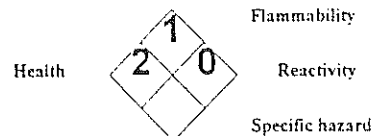
WHMIS (Canada) WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).

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.