



MATERIAL SAFETY DATA SHEET

PRODUCT TRI-ACT 1800 INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

GS582

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: TRI-ACT 1800 INHIBITOR

DESCRIPTION: An aqueous solution of amines

NFPA 704M/HMIS RATING: 3/3 HEALTH 2/2 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Cyclohexylamine	108-91-8	10-20
Ethanolamine	141-43-5	10-20
Methoxypropylamine	5332-73-0	10-20

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Causes burns to skin and eyes. Combustible. Do not get in eyes, on skin, or on clothing. Wear goggles and face shield and rubber gloves when handling. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally. Keep away from heat and open flame. Keep container closed when not in use.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Do not induce vomiting. Give water. Call a physician at once.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician at once.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

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SECTION 4 FIRST AID INFORMATION

(CONTINUED)

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.

SKIN CONTACT: Corrosive to the skin, possibly resulting in third degree burns depending on the length of exposure and on the first aid action given. Can cause allergic contact dermatitis in susceptible individuals.

INGESTION: Can be harmful or fatal.

INHALATION: Can be corrosive to the mucous membranes and the lungs. Can cause an allergic reaction in susceptible individuals.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have been conducted on this product along with acute toxicity studies on the hazardous ingredient(s) in Section 2. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):

LD₅₀ = 1267 mg/kg

95% Confidence Limit = 1,047 to 1,532 mg/kg

COMMENTS: Excessive salivation, squinting of the eyes, loss of muscular coordination, prostration and irregular breathing were observed.

ACUTE DERMAL TOXICITY (ALBINO RABBITS):

LD₅₀ = Greater than 2,000 mg/kg



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SECTION 6 TOXICOLOGY INFORMATION

(CONTINUED)

COMMENTS: Redness, swelling, and blanching of the skin were noted. Scab formation was due to the corrosive action of the product. However, no systemic signs of toxicity were observed.

SKIN SENSITIZATION: Cyclohexylamine can cause sensitization in susceptible individuals.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: Corrosive

COMMENTS: Severe redness, swelling, and blistering of the conjunctiva were observed. Opacification of the cornea was also noted. Due to the extreme corrosive action of the test material, no Draize index rating could be assigned.

OTHER TOXICITY RESULTS: Cyclohexylamine. A battery of tests including the Ames test, sister chromatid exchange, cell transformation, mouse lymphoma and rat hepatocyte/DNA repair provided inconclusive evidence of mutagenic activity.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Colorless	FORM: Liquid	ODOR: Amine
DENSITY: 8.2 lbs/gal.		
SOLUBILITY IN WATER: Completely		
SPECIFIC GRAVITY: 0.99 @ 77 Degrees F		ASTM D-1298
pH (NEAT) = 12.6	pH (at 1%) 11.2	ASTM E-70
VISCOSITY: 5 cps @ 77 Degrees F		ASTM D-2983
FREEZE POINT: 8 Degrees F		ASTM D-1177
FLASH POINT: 135 Degrees F (PMCC)		ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: 135 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Based on the NFPA guide, use dry chemical, foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions.



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SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: N-nitrosamines, many are cancer causing agents to laboratory animals, may be formed when certain amines are mixed with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations.

Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂, NO_x may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent respirator is recommended.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors or mists may be released.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles. A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into



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SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

DISPOSAL: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery Act (RCRA) 40 CFR 261. Hazardous Waste D001 & D002.

As a hazardous liquid waste, it must be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to a licensed industrial waste landfill (Hazardous Waste Treatment, Storage and Disposal facility). A hazardous liquid waste can also be incinerated in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - CORROSIVE LIQUID, N.O.S.
CORROSIVE MATERIAL UN 1760
CONTAINS - CYCLOHEXYLAMINE

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Cyclohexylamine - Corrosive, combustible
Ethanolamine - Corrosive, combustible
Methoxypropylamine - Corrosive, combustible

Cyclohexylamine = TWA 10 ppm, 41 mg/m³ ACGIH/TLV
Ethanolamine = TWA 3 ppm, STEL 6 ppm ACGIH/TLV
7.5 mg/m³ 15 mg/m³ ACGIH/TLV



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

Cyclohexylamine = TWA 10 ppm, 40 mg/m³ OSHA/PEL

Ethanolamine = TWA 3 ppm, STEL 6 ppm OSHA/PEL
8 mg/m³ 15 mg/m³ OSHA/PEL

Methoxypropylamine = TWA 10 ppm, 20 ppm (15 minute exposure) AIHA/WEEL

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986

(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product contains cyclohexylamine, which is listed in Appendix A and B as an Extremely Hazardous Substance. The statutory threshold planning quantity for this substance is 10,000 pounds.

A release of 10 pounds of product will require a notification to your State Emergency Response Commission.

You may also be required to notify the NATIONAL RESPONSE CENTER - See CERCLA/SUPERFUND, above.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard

-- Delayed (chronic) health hazard

XX Fire hazard

-- Sudden release of pressure hazard

-- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

If this product becomes a waste, it does meet the criteria of a hazardous waste as defined under RCRA 40 CFR 261 (consult Section 11).

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15

(formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

None of the ingredients are specifically listed.

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:

This product contains the following ingredients covered by the Clean Air Act:

Ethanolamine - Section 111

Cyclohexylamine - Section 111

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

CALIFORNIA AIR TOXIC 'HOT SPOTS' INFORMATION AND ASSESSMENT ACT OF 1987 (CALIFORNIA STATUTE AB2588):

This product does not contain ingredients listed on either Appendix A-I or A-II of the Air Toxic Information and Assessment Act.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Cyclohexylamine	108-91-8
Ethanolamine	141-43-5
Methoxypropylamine	5332-73-0
Water	7732-18-5

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SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Admur, M. O., eds., Macmillian Publishing Company, Inc., N. Y., 2nd edition, 1980.

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PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE



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SECTION 17 BIBLIOGRAPHY

(CONTINUED)

WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

Information on this MSDS has changed. The changes are indicated by asterisks on the right side of only the changed sections. This is an updated MSDS as required by OSHA's Hazard Communication Rule 29 CFR 1910.1200.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 07/03/90

DATE PRINTED: 07/14/90



MATERIAL SAFETY DATA SHEET

PRODUCT

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

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MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION S0260 SPECIAL INDICAT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

GS605

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: SOLUTION S0260 SPECIAL INDICAT *
DESCRIPTION: Special indicator, (M) indicator - brom cresol green and methyl *
red dissolved in isopropanol *

NFPA 704M/HMIS RATING: 1/1 HEALTH 3/3 FLAMMABILITY 0/0 REACTIVITY 0 OTHER*
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme *

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as *
hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult *
Section 14 for the nature of the hazard(s). *

INGREDIENT(S)	CAS #	APPROX.%
Isopropanol	67-63-0	99+

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: FLAMMABLE. Keep away from heat, sparks and flame. May cause *
irritation to skin and eyes. Avoid contact with skin, eyes and clothing. *
Avoid breathing vapors. Do not take internally. Keep container closed when *
not in use. *

Empty containers may contain residual product. Do not reuse container *
unless properly reconditioned. *

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Flush with water for 15 minutes.
INGESTION: Do not induce vomiting. Give water. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the
individual reactions of the patient, the physician's judgment should be
used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions,
do not induce vomiting or give water.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation



MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION S0260 SPECIAL INDICA

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SECTION 5 HEALTH EFFECTS INFORMATION

(CONTINUED)

EYE CONTACT: Can cause moderate irritation.
SKIN CONTACT: Can cause moderate irritation.
INHALATION: Prolonged inhalation of mist or vapor may cause nausea, dizziness, light-headedness, vomiting or unconsciousness depending on the length of exposure and the first aid action given.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but toxicity studies of the ingredient(s) in Section 2 have been reviewed. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD₅₀ = 5,000 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS): LD₅₀ = 13 gm/kg

ACUTE INHALATION TOXICITY (ALBINO RATS): LC₅₀ = 16,000 ppm (8-hours)

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear amber to orange	FORM: Liquid	ODOR: Isopropanol
SOLUBILITY IN WATER: Completely		
SPECIFIC GRAVITY: 0.79 @ 60 Degrees F		ASTM D-1298
BOILING POINT: 180 Degrees F @ 760 mm Hg		ASTM D-86
FLASH POINT: 56 Degrees F (TCC)		ASTM D-56
PERCENT VOLATILE BY WEIGHT: Greater than 99%		

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: 56 Degrees F (TCC) ASTM D-56

AUTOIGNITION TEMPERATURE: 860 Degrees F (ASTM D2155-66)

UEL 12.0% LEL 2.0%

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MATERIAL SAFETY DATA SHEET

PRODUCT SOLUTION 50260 SPECIAL INDICA

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

GS605

SECTION 8 FIRE AND EXPLOSION INFORMATION

(CONTINUED)

EXTINGUISHING MEDIA: Based on the NFPA guide, use dry chemical, foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

UNUSUAL FIRE AND EXPLOSION HAZARD: Not applicable

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent organic vapor cartridge respirator is recommended.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment or doing maintenance.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Keep the spill away from heat, sparks, flames and welding operations. Ventilate area and evacuate employees from exposure if the airborne



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PRODUCT SOLUTION S0260 SPECIAL INDICA

Emergency Telephone Number

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SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

concentration exceeds the TLV. Refer to Section 14.

DISPOSAL: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery Act (RCRA) 40 CFR 261. Hazardous Waste D001.

As a hazardous liquid waste, it must be solidified before disposal in a landfill (Hazardous Waste Treatment, Storage and Disposal facility). Can be incinerated in accordance with local, state and federal regulations.

Empty product containers should be punctured, if plastic, and placed in the garbage collection container.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - ISOPROPANOL FLAMMABLE LIQUID UN 1219

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Isopropanol - Flammable

Isopropanol = TWA 400 ppm, STEL 500 ppm ACGIH/TLV
985 mg/m³, 1230 mg/m³ ACGIH/TLV

Isopropanol = TWA 400 ppm, STEL 500 ppm OSHA/PEL
980 mg/m³, 1225 mg/m³ OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- XX Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

If this product becomes a waste, it does meet the criteria of a hazardous waste as defined under RCRA 40 CFR 261 (consult Section 11).

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15

(formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

None of the ingredients are specifically listed.

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:

This product contains the following ingredients covered by the Clean Air Act:

Isopropanol - Section 111



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

Regulated in those states using the TLV for isopropanol as a criteria for listing.

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

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SECTION 17 BIBLIOGRAPHY

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REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

Information on this MSDS has changed. The changes are indicated by asterisks on the right side of only the changed sections. This is an updated MSDS as required by OSHA's Hazard Communication Rule 29 CFR 1910.1200.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 07/11/90

DATE PRINTED: 08/11/90



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PRODUCT

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SECTION IX - SPECIAL PROTECTION INFORMATION PAGE : 05

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PROTECTIVE GLOVES
 RUBBER GLOVES SHOULD BE WORN BY SENSITIVE
 INDIVIDUAL DEPENDING ON SEVERITY OF EXPOSURE.

EYE PROTECTION
 SAFETY GOGGLES SHOULD BE WORN DEPENDING ON
 SEVERITY OF EXPOSURE.

OTHER PROTECTION
 CLEAN, PROTECTIVE CLOTHING SHOULD BE WORN.

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
100 F <--MAX 30 F <--MIN	X		X	

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
 AVOID CONTACT WITH EYES, SKIN AND CLOTHING.

OTHER PRECAUTIONS
 WASH THOROUGHLY AFTER HANDLING. KEEP OUT OF REACH
 OF CHILDREN. AVOID CONTACT WITH EYES, SKIN AND
 CLOTHING.

SECTION XI - REGULATORY INFORMATION

CHEMICAL NAME	C.A.S. NUMBER	UPPER % LIMIT
---------------	---------------	---------------

N/A

THOSE INGREDIENTS LISTED ABOVE ARE SUBJECT TO THE REPORTING REQUIREMENTS OF
 315 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF
 1986 AND 40 CFR PART 372.

IF UE (USE EXEMPTION) APPEARS UNDER UPPER % LIMIT, END USERS ARE EXEMPT
 FROM NOTIFICATION BECAUSE THE PRODUCT IS USED AND LABELED FOR ROUTINE
 JANITORIAL WORK, OR THE PRODUCT IS USED AND LABELED FOR FACILITY GROUNDS
 MAINTENANCE (SUCH AS FERTILIZERS AND HERBICIDES), OR THE PRODUCT IS USED AND
 LABELED FOR MAINTAINING MOTOR VEHICLES.

SECTION XII - TRANSPORTATION * (FOR FUTURE USE)

APPLICABLE REGULATIONS	<--TARIFF 6 D	<--IATA	<--MILITARY AIR (AFR 71-4)
<--49 CFR <--IMCO			

M/M QUICK CURE

(CONTINUED)

SECTION XII - TRANSPORTATION * (FOR FUTURE USE)

PAGE : 06

SHIPPING NAME

HAZARD CLASS	ID NUMBER	REPORT QTY
--------------	-----------	------------

LABELS	LIMITED QTY
--------	-------------

UNIT CONTAINER

DOT SPS CONTAINER	NET EXPLOSIVE WT.
-------------------	-------------------

AEROSOL PROPELLANT(S)

SECTION XIII - REFERENCES

1. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS. 6TH EDITION,
N. IRVING SAX.
2. THRESHOLD LIMIT VALUE FOR CHEMICAL SUBSTANCES IN THE
WORK ENVIRONMENT, 2ND EDITION. ACGIH, 1985.
3. VENDOR'S MSDS.

INGREDIENT PERCENTAGE IS A TRADE SECRET;
 MASS TRADE SECRET NUMBER 99-127-002

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED
 ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY
 IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA
 OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

NATIONAL CHEMSEARCH DIV. OF NCH CORP. ASSUMES NO RESPONSIBILITY
 FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE
 OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE
 PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH
 UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

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(006339-0157P -E0021638-5974)

DATE OF ISSUE
12/13/89SUPERSEDES
11/11/87

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS

N/A

TRADE NAME & SYNONYMS

M/M QUICK CURE

CHEMICAL FAMILY

EPOXY STICK

FORMULA

X<-MIXTURE

MANUFACTURER'S NAME

NATIONAL CHEMSEARCH DIV. OF NCH CORP

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)

BOX 152170

IRVING, TEXAS 75015

PREPARED BY

CHANDA B. HILL/T.S. CHEM.

PRODUCT CODE NUMBER

5974

EMERGENCY TELEPHONE NUMBER

214-438-1381

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL
COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED
AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
BASE: DIGLYCIDIAL ETHER OF BIS	IRRITANT	5 MG/M3 2.	N/A	25085-99-8
PHENOL A				
2,4,6 TRI(DIMETHYLAMINO				
METHYL PHENOL) *	IRRITANT	5PPM 3.	NOT EST.	90-72-2

SECTION IIA - NON-HAZARDOUS INGREDIENTS

NON-HAZARDOUS INGREDIENT NAMES AND CAS NUMBERS ARE PROTECTED UNDER NJ TRADE

M/M QUICK CURE

(CONTINUED)

SECTION IIA - NON-HAZARDOUS INGREDIENTS

PAGE : 02

SECRET REGISTRY # 409363-5043P

SECTION III - PHYSICAL DATA

BOILING PT. (FAHRENHEIT)	B: >250 F	SPEC GRAVITY (H2O=1)	>1
VAPOR PRESSURE (MM HG)	N/A	COLOR	A: LT. GRAY B: DRK GRAY
VAPOR DENSITY (AIR=1)	>1	ODOR	MERCAPTAN LIKE
PH @ 100%	N/A	CLARITY	OPAQUE
PERCENT VOLATILE BY VOLUME (%)	NIL	EVAPORATION RATE (BU AC = 1)	N/A
SOLUBILITY IN WATER	NEG.		
VISCOSITY	PUTTY		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED)	A: >250 FCLOSED CUP	FLAMMABLE LIMITS	N/A	LEL	N/A	UEL
EXTINGUISHING MEDIA	"ALCOHOL" X<-FOAM	X<-CO2	X<-CHEMICAL	X<-WATER SPRAY	X<-OTHER	
SPECIAL FIRE FIGHTING PROCEDURES WEAR NIOSH/MSHA APPROVED RESPIRATOR WHEN FIGHTING FIRES IN CONFINED AREAS TO PROTECT FROM ACIDIC SMOKE, FUMES AND HAZARDOUS DECOMPOSITION PRODUCTS.						

UNUSUAL FIRE & EXPLOSION HAZARDS
NONE KNOWNNFPA HAZARD RATING (0=INSIGNIFICANT; 1=SLIGHT; 2=MODERATE; 3=HIGH; 4=EXTREME):
2<-HEALTH 1<-FLAMMABILITY 0<-REACTIVITY <-SPECIAL

SECTION V - HEALTH HAZARD DATA

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M/M QUICK CURE

(CONTINUED)

SECTION V - HEALTH HAZARD DATA

PAGE : 03

THRESHOLD LIMIT VALUE :

NOT ESTABLISHED FOR MIXTURE SEE SECTION II

EFFECTS OF OVEREXPOSURE

PROLONGED OR REPEATED EXPOSURE MAY CAUSE SKIN SENSITIZATION. IN SENSITIVE INDIVIDUALS CONTACT MAY CAUSE SKIN IRRITATION. THIS PRODUCT IS BOTH MECHANICALLY IRRITATING AND CHEMICALLY IRRITATING TO THE EYES. INHALATION IS NOT A HAZARD IN NORMAL USE HOWEVER THIS PRODUCT GIVES OFF TOXIC FUMES WHEN BURNED OR WELDED. INGESTION MAY LEAD TO GASTRIC IRRITATION WITH NAUSEA AND VOMITING.

PROLONGED SKIN CONTACT CAN CAUSE SENSITIZATION.

PRIMARY ROUTE OF ENTRY: <-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION :

GENERALLY NOT A HAZARD. MOVE TO FRESH AIR AND TREAT SYMPTOMATICALLY. GIVE OXYGEN IF BREATHING IS DIFFICULT AND ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED. GET MEDICAL ATTENTION.

EYE CONTACT :

FLUSH WITH WATER FOR 10 MINUTES. LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL IRRITATION IF IRRITATION PERSISTS. TREATMENT IS MOST EFFECTIVE WITHIN ONE MINUTE.

SKIN CONTACT

WASH WITH SOAP AND WATER. SENSITIVE INDIVIDUALS SHOULD APPLY AN EMOLLIENT RICH CREAM AND SHOULD SEE A PHYSICIAN IF IRRITATION PERSISTS.

INGESTION :

DO NOT INDUCE VOMITING. GIVE ONE OR TWO GLASSES OF WATER AND CALL PHYSICIAN. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

NOTES TO PHYSICIAN :

GASTRIC LAVAGE IS INDICATED. DO NOT INDUCE VOMITING.

SECTION VI - TOXICITY INFORMATION

PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

IARC	<--YES	NTP	<--YES	DSHA	<--YES	ACGIH	<--YES	OTHER	<--YES
	X<--NO		X<--NO		X<--NC		X<--NO		X<--NO

2,4,6 TRI(DIMETHYLAMINO METHYL PHENOL)		
ORL-RAT LD50: 2.5 G/KG 1.	SKN-RAT LD50: 1280 MG/ KG 1.	
SKN-RBT LD50: 1.2G/KG 1.	SKN-RBT 500MG/24H SEVERE 1.	
	EYE-RBT 500MG/24H/SEVERE 1.	

DIGLYCIDIAL ETHER OF BISPHENOL A
SKN-RBT 500 MG OPEN MILD 1.

M/M QUICK CURE

(CONTINUED)

SECTION VI - TOXICITY INFORMATION

PAGE : 04

EYE-RBT 2 MG/24 H SEVERE 1.
ORL-RAT LD50: 11 G/KG 1.

SECTION VII - REACTIVITY DATA

STABILITY	X<--STABLE	<--UNSTABLE	CONDITIONS TO AVOID
	OPEN FLAMES, LONG-TERM EXPOSURE TO HIGH TEMPERATURES.		

INCOMPATIBILITY (MATERIALS TO AVOID)
STRONG OXIDIZING AGENTS OR STRONG BASES OR MINERAL ACIDS

HAZARDOUS DECOMPOSITION PRODUCTS
OXIDES OF CARBON, NITROGEN, AMMONIA AND ACRID SMOKE AND FUMES.

HAZARDOUS	WILL NOT	MAY	CONDITIONS TO AVOID
	X <--OCCUR	<--OCCUR	

POLYMERIZATION: N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
DUE TO THE NATURE OF THE PACKAGING OF THIS PRODUCT A SPILL IS UNLIKELY.

WASTE DISPOSAL METHOD:
DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL POLLUTION REGULATIONS.

NEUTRALIZING AGENT
N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
LOCAL EXHAUST RECOMMENDED TO CONTROL VAPOR LEVELS IF BURNED OR WELDED.
GENERAL EXHAUST IS MORE THAN ADEQUATE TO PROTECT WORKER FROM EXPOSURE TO LEVELS ABOVE PERMISSIBLE EXPOSURE LIMITS.

RESPIRATORY PROTECTION
WEAR NIOSH APPROVED RESPIRATOR TO PROVIDE ADEQUATE VENTILATION
WHEN BURNING, WELDING OR MACHINING (GRINDING).

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MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 5270 PROCESS ANTIFOULANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

G-S-657

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 5270 PROCESS ANTIFOULANT

DESCRIPTION: A blend of an amine salt of alkyl phosphates in a hydrocarbon solvent

NFPA 704M/HMIS RATING: 2/2 HEALTH 2/2 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous. One or more is being claimed as a trade secret under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Heavy aromatic naphtha	68603-08-7	10-20
Naphthalene	91-20-3	1-5
Ethylbenzene	100-41-4	1-5
Xylene	1330-20-7	1-5
Amine alkyl phosphate salts	Proprietary	70-100

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Causes irritation to skin and eyes. Combustible. Prolonged inhalation of vapor may be harmful. Do not get in eyes, on skin or on clothing. Wear goggles or face shield when handling. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally. Keep away from heat and open flame. Keep container closed when not in use.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.
SKIN: Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION: Do not induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 5270 PROCESS ANTIFOULANT

Emergency Telephone Number

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SECTION 4 FIRST AID INFORMATION

(CONTINUED)

individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Can cause moderate irritation.
SKIN CONTACT: Can cause moderate irritation.
INHALATION: Prolonged inhalation of vapor may be harmful.

SYMPTOMS OF EXPOSURE:

ACUTE: Inhalation of high concentrations of product can cause nausea, dizziness, vomiting, stupor or unconsciousness.

CHRONIC: Prolonged skin contact with product can cause dry skin and defatting resulting in irritation and dermatitis.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but acute studies have been conducted on a similar product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD₅₀ = Approximately 5,000 mg/kg

COMMENTS: Four of the ten rats died within three days at a dosage of 5,000 mg/kg. Lethargy, loss of muscular coordination, tremors, diarrhea, and labored respiration were observed.

ACUTE DERMAL TOXICITY (ALBINO RABBITS): LD₅₀ = Approximately 2,000 mg/kg

COMMENTS: Five of the ten rabbits died by the end of seven days after a dosage of 2,000 mg/kg. Loss of appetite, emaciation, lethargy, decreased



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SECTION 6 TOXICOLOGY INFORMATION

(CONTINUED)

muscular coordination and salivation were noted. Dermatitis, sloughing of the epidermis and scab formation were also noted in the surviving animals.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING: 4.1/8.0 Moderately irritating

COMMENTS: Well defined redness and slight to moderate swelling were observed immediately after the removal of the occluded dressing (4-hour contact). These reactions decreased in severity after 24-hours and continued to lessen through the remainder of the study (7 days).

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 19.0/110.0 1-hour exposure
37.5/110.0 24-hours exposure
25.8/110.0 72-hours exposure

COMMENTS: Corneal opacities, iritis and conjunctivitis were observed within one hour. Blistering of the conjunctival tissues and pannus formation were also noted. Peak ocular injury was noted at 24-hours. This condition then slowly subsided through the end of the study.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear light amber	FORM: Liquid	ODOR: Hydrocarbon
SOLUBILITY IN WATER: Insoluble		
SPECIFIC GRAVITY: 0.95 @ 60 Degrees F		ASTM D-1298
VISCOSITY: 139 cst @ 100 Degrees F		ASTM D-445
POUR POINT: Less than -30 Degrees F		ASTM D-97
FLASH POINT: Minimum 120 Degrees F (PMCC)		ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Minimum 120 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Based on the NFPA guide, use dry chemical, alcohol foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions. Containers exposed in a fire should be cooled with water to prevent vapor pressure buildup leading to a rupture.



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 5270 PROCESS ANTIFOULANT

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SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂, NO_x may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed. If significant vapors or mists are generated, wear a NIOSH approved or equivalent respirator, (ANSI Z 88.2, 1980 for requirements and selection).

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles (ANSI Z 87.1 requirements and selection of gloves, goggles, shoes, etc.) when attaching feeding equipment or doing maintenance.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery



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SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

Act (RCRA) 40 CFR 261. Hazardous Waste D001.

As a hazardous liquid waste, it must be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to a licensed industrial waste landfill (Hazardous Waste Treatment, Storage and Disposal facility). A hazardous liquid waste can also be incinerated in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - COMBUSTIBLE LIQUID, N.O.S.
COMBUSTIBLE LIQUID NA 1993
CONTAINS - AROMATIC HYDROCARBONS,
NAPHTHALENE

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Heavy aromatic naphtha - Combustible, skin irritant

Naphthalene - Irritant

Amine alkyl phosphate salts - Eye/skin irritant

Naphthalene = TWA 10 ppm, STEL 15 ppm ACGIH/TLV
52 mg/m³, 79 mg/m³ ACGIH/TLV
Ethylbenzene = TWA 100 ppm, STEL 125 ppm ACGIH/TLV
434 mg/m³, 543 mg/m³ ACGIH/TLV
Xylene = TWA 100 ppm, STEL 150 ppm ACGIH/TLV
434 mg/m³, 651 mg/m³ ACGIH/TLV

Naphthalene = TWA 10 ppm, STEL 15 ppm OSHA/PEL
50 mg/m³, 75 mg/m³ OSHA/PEL
Ethylbenzene = TWA 100 ppm, STEL 125 ppm OSHA/PEL
435 mg/m³, 545 mg/m³ OSHA/PEL



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 5270 PROCESS ANTIFOULANT

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Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

Xylene = TWA 100 ppm, STEL 150 ppm OSHA/PEL
435 mg/m³, 655 mg/m³ OSHA/PEL

Heavy aromatic naphtha = 100 ppm TLV
Manufacturer's recommendation

CERCLA, 40 CFR 117, 302:

This product contains naphthalene, a Reportable Quantity (RQ) substance and if 10,000 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D. C. (1-800-424-8802).

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS
(40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard
-- Delayed (chronic) health hazard
XX Fire hazard
-- Sudden release of pressure hazard
-- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

After October 17, 1989, MSDS(s), or a list of product names for all hazardous substances between zero (0) and 10,000 pounds, not previously reported, must be submitted.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product contains the following ingredient(s), (with CAS # and % range)



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PRODUCT NALCO 5270 PROCESS ANTIFOULANT

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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

which appear(s) on the List of Toxic Chemicals.

Naphthalene	91-20-3	1-5
Ethylbenzene	100-41-4	1-5
Xylene	1330-20-7	1-5

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

If this product becomes a waste, it does meet the criteria of a hazardous waste as defined under RCRA 40 CFR (consult section 11).

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

This product contains the following ingredients covered by the Clean Water Act:

Naphthalene - Section 307, 311
Ethylbenzene - Section 307, 311
Xylene - Section 311

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:

This product contains the following ingredients covered by the Clean Air Act:

Ethylbenzene - Section 111
Xylene - Section 111

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

Substances known to the State of California to cause cancer may be present as an impurity or residue.

MICHIGAN CRITICAL MATERIALS:

This product contains the following substance(s) identified on the Michigan Critical Materials Register:

Ethylbenzene, Xylene

STATE RIGHT TO KNOW LAWS:

Regulated in those states using the TLV for naphthalene, ethylbenzene, and xylene as a criteria for listing.



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 5270 PROCESS ANTIFOULANT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill C-70. The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredient(s):

Chemical Name	CAS #	% Concentration Range
Heavy aromatic naphtha	68603-08-7	10-20
Naphthalene	91-20-3	1-5
Ethylbenzene	100-41-4	1-5
Xylene	1330-20-7	1-5
Amine alkyl phosphate salts	Proprietary	70-100

SECTION 15 ADDITIONAL INFORMATION

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SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

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SECTION 17 BIBLIOGRAPHY

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PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 09/25/89

DATE PRINTED: 05/19/90



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PRODUCT

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SAL 000009765

October 1, 1990

Fire Chief
Westlake Fire Department
2401 Guillory Street
Westlake, LA 70669

ADDENDUM TO SUBMITTAL OF MSDS UPDATES - THIRD QUARTER 1990

Dear Sir:

Enclosed please find additional MSDS's to be added to your file along with the larger packet mailed to your office for the third quarter.

Please accept my apologies for the oversight.

David L. Tinker, Safety Supervisor
Conoco Refinery

enc.

COM. ⁴¹⁰~~409~~

SAL 000009766

October 1, 1990

Louisiana Emergency Response Commission
Office of State Police
Hazardous Substance Control Section
Right-To-Know
P.O. Box 66614
Baton Rouge, LA 70896

ADDENDUM TO SUBMITTAL OF MSDS UPDATES - THIRD QUARTER 1990

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David L. Tinker, Safety Supervisor
Conoco Refinery

enc.

COM.408

SAL 000009767

October 1, 1990

Mr. Samuel H. Russell
Calcasieu Parish Local Emergency Planning Committee
P.O. Box 1391
Lake Charles, LA 70602-1391

ADDENDUM TO SUBMITTAL OF MSDS UPDATES - THIRD QUARTER 1990

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David L. Tinker, Safety Supervisor
Conoco Refinery

enc.

COM.409

SAL 000009768