

**MATERIAL SAFETY DATA SHEETS FOR
anti-Jo-1 COMPONENTS:**

Sodium Azide (Pgs. 2 – 8)

Sodium Phosphate Tribasic (Pgs. 9 – 16)

P-Nitrophenyl Phosphate (Pgs. 17 - 21)

Proclin 300 (Pgs. 22 - 26)

THE FOLLOWING COMPOUND IS FOUND IN OUR
CALIBRATORS, STANDARDS, POSITIVE CONTROL AND NEGATIVE CONTROL

SECTION 1 : PRODUCT IDENTIFICATION

Name: Sodium azide

Synonyms: Azide, sodium, Smite, RCRA Waste No. P105

CAS No.: 26628-22-8

EC No.: 247-852-1

Molecular Weight: 65.01

Chemical Formula: NaN₃

Product Codes: 0639

Manufacturer Information:

Amresco Inc.

30175 Solon Industrial Parkway

Solon, Ohio 44139

For Information: (800) 448-4442 or (440) 349-1199

Emergency Telephone Number: CHEMTREC – (800) 424-9300

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Sodium Azide

CAS No.: 26628-22-8

Percent: >99 %

Hazardous: Yes

SECTION 3 : HAZARDS IDENTIFICATION

Label Precautionart Statements:

HIGHLY TOXIC (USA),

VERY TOXIC (EU),

IRRITANT, IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

MAY CAUSE HERITABLE GENETIC DAMAGE.

VERY TOXIC BY INHALATION, IN CONTACT WITH SKIN, AND IF SWALLOWED

CONTACT WITH ACID LIBERATES VERY TOXIC GAS.

HEATING MAY CAUSE AN EXPLOSION

READILY ABSORBED THROUGH SKIN.

AVOID CONTACT WITH METALS.

TARGET ORGANS: NERVES, HEART.

IN CASE OF ACCIDENT , OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY
(SHOW LABEL WHERE POSSIBLE).

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

DO NOT BREATHE DUST.

SECTION 4 : FIRST AID MEASURES

Skin Contact:

In case of contact immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before re-use.

Inhalation:

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

Ingestion:

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

SECTION 5 : FIRE FIGHTING MEASURES

Fire Extinguishing Media:

Do not use water.

Dry chemical powder.

Special Firefighting Procedures:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual Fire and Explosions Hazards:

Container explosion may occur under fire conditions. Emits toxic fumes under fire conditions.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Instructions:

Evacuate Area

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

Spills:

Sweep up, place into 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

(Refer to Section 8)

Additional Information:

Azide reacts with many heavy metals such as lead, copper, mercury, silver, and gold to form explosive compounds. Copper and lead azides are more sensitive than nitroglycerine. Azide reacts with metal halides to give a range of metal azide halides, many of which are explosive. Incompatible with chromyl chloride, hydrazine, bromine, carbon disulfide, dimethyl sulfate, dibromomalonitrile. An explosion occurred when a mixture of sodium azide, methylene chloride, dimethyl sulfoxide and sulfuric acid were being concentrated on a rotary evaporator.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.
Use only in chemical fume hood.
Maintain safety shower and eye bath.
Do not breathe dust.
Do not get into eyes, on skin or on clothing.
Avoid prolonged or repeated exposure.
Wash thoroughly after handling.
Highly toxic.
Irritant.
Keep tightly closed.
Heat-sensitive.
Store in a cool, dry place.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Solid.
Odor: Odorless.
Solubility: 42 g/100 g water @ 17C (63F)
Specific Gravity: 1.85

SECTION 10 : STABILITY AND REACTIVITY

Incompatibilities:
Acid chlorides
Halogenated solvents
Avoid contact with metals
Avoid contact with acid
Explodes when heated.
Hazardous Decomposition Products:
Nitrogen oxides

SECTION 11 : TOXICOLOGICAL INFORMATION

Acute Effects: May be fatal if inhaled, swallowed or absorbed through skin.
Causes eye and skin irritation.
Material is irritating to mucous membranes and upper respiratory tract.
Exposure can cause nausea, headache and vomiting.

Chronic effects:
May alter genetic material.
Target organs: Nerves, heart, brain

Additional Information:
Laboratory experiments in animals have shown sodium azide to produce a profound hypotensive effect, demyelination of myelinated nerve fibers in the central nervous system, testicular damage, blindness, attacks of rigidity, hepatic and cerebral effects.

RTECS #: VY8050000 SODIUM AZIDE

Toxicity Data:
ORL-WMN LDLO: 786 mg/kg (1989) & 14 mg/kg (1990)
ORL-MAN LDLO: 29 mg/kg (1989) & 129 mg/kg (1996) & 143 mg/kg (1986)
ORL-RAT LD50: 27 mg/kg (1991)
ORL-MUS LD50: 27 mg/kg (CLDND)
ORL-BWD LD50: 23700 ug/kg (1983)
SCU-RAT LD50: 45100 ug/kg (1961)
SCU-MUS LD50: 23060 ug/kg (1961)
ITR-RAT LD50: 47500 ug/kg (1961)
IPR-MUS LD50: 28mg/kg (1948)
IVN-MUS LD50: 19mg/kg (CLDND)
UNR-MUS LD50: 27 mg/kg (1952)
SKIN-RBT LD50: 20 mg/kg (1991)

Target Organ Data:
Brain and coverings (increased cranial pressure)
Peripheral nerve & sensation [spastic paralysis with/without sensory sense organs and special senses (mydriasis)]
Behavioral (general anesthetic, somnolence, convulsions or effect on seizure threshold, change in motor activity, coma, headache, irritability)
Cardiac (arrythmias, pulse rate decreased with fall in BP, change in force of contraction, other changes)
Vascular (BP lowering)
Respiratory, Lungs, Thorax (acute pulmonary edema, dyspnae, respiratory stimulation, other changes)

SECTION 11 : TOXICOLOGICAL INFORMATION (cont.)

Gastrointestinal (hypermotility, diarrhea)
Kidney, Ureter, Bladder (other changes)
Only selected registry of toxic effects of chemical substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

SECTION 12 : ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 : DISPOSAL CONSIDERATIONS

Contact a licensed, professional waste disposal service to dispose of this material.
Observe all Federal, State and local environmental regulations.

SECTION 14 : TRANSPORT INFORMATION

Domestic (Land, D.O.T.)

Proper Shipping Name: SODIUM AZIDE
Hazard Class: 6.1
UN/NA: UN1687
Packing Group: II

SECTION 15 : REGULATORY INFORMATION

European Information:

Ingredient: Sodium Azide (26628-22-8)
EC Index #: 011-004-00-7 Very Toxic
R: 26/27/28 -Very toxic by inhalation, in contact with skin and if swallowed. Irritant.
R: 36/37/38 -Irritating to eyes, respiratory system and skin
R: 40 -Possible risk of irreversible effects
S: 36/37/39 -Wear suitable protective clothing, gloves and eye/face protection.

SECTION 15 : REGULATORY INFORMATION (cont.)

Reviews, Standards, and regulations:

OEL = MAK

OEL-Australia (TWA 0.1 ppm, 1993), **Belgium** (STEL 0.1 ppm, 1993), **Denmark** (TWA 0.3 mg/m³, 1993), **Finland** (TWA 0.1 ppm, 1993), **France** (STEL 0.1ppm, 1993), **Germany** (TWA 0.07 ppm, 1993), **Netherlands** (TWA 0.1 ppm, 1993), **Switzerland** (TWA 0.1 ppm, 1993), UK (TWA 0.1 ppm, 1993), in **Bulgaria, Colombia, Jordan, Korea, New Zealand, Singapore, Vietnam** check ACGIH TLV

NIOSH: Rel to Sodium Azide, as HN3-Air:CL 0.1 ppm (SK)
NIOSH DHHS # 92-100, 1992

NOHS 1974: HZD 68820; NIS 13; TNF 877; NOS 10; TNE 5953

NOES 1983: HZD 68820; NIS 19; TNF 3640; NOS 27; TNE54959; TFE 38370

EPA GENETOX PROGRAM 1988:

Positive: L5178Y cells in vitro-TK test, d-melanogaster sex-linked lethal, *S. cerevisiae* gene conversion and forward mutation and reversion

Negative: In vitro cytogenetics-human lymphocyte, sperm morphology-mouse, in vitro UDS-human fibroblast, TRP reversion

Inconclusive: carcinogenicity-mouse/rat, TRP reversion

EPA TSCA Section 8(B) Chemical Inventory

EPA TSCA Section 8(D) Unpublished health/safety studies on EPA IRIS database

EPA TSCA Test submission (TSCATS) database, Apr 1997

NIOSH Current Intelligence Bulletin 13, 1976

NTP Carcinogenesis studies (GAVAGE): No evidence: Rat –NTPTR NTP-TR-389,91

U.S Information

This product is subject to SARA Section 313 reporting requirements

SECTION 16 : OTHER INFORMATION

No additional data available.

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Prepared by: Amresco Inc
Phone Number: (800) 448-4442 (U.S.A)
Emergency Number: (800) 424-9300 (CHEMTREC)

THE FOLLOWING COMPOUND IS FOUND IN OUR
ENA STOP SOLUTION

SECTION 1 : PRODUCT IDENTIFICATION

Synonyms: Trisodium phosphate, dodecahydrate; phosphoric acid, trisodium salt dodecahydrate

CAS No.: 7601-54-9 (Anhydrous)

Molecular Weight: 380.12

Chemical Formula: Na₃PO₄.12H₂O

Product Codes: 7932, 7940

Company Identification:

Mallinckrodt Baker, Inc.

222 Red School Lane

Phillipsburg, NJ 08865

24-hour Emergency Telephone: (908) 859-2151

National Response in Canada: CANUTEC - (613) 996-6666

Outside US and Canada: Chemtrec – (703) 527-3887

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Sodium Phosphate, Tribasic

CAS No.: 7601-54-9

Percent: > 98%

Hazardous: Yes

Ingredient: Sodium Hydroxide

CAS No.: 1310-73-2

Percent: < 2.5%

Hazardous: Yes

SECTION 3 : HAZARDS IDENTIFICATION

Emergency Overview:

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED. REACTS VIOLENTLY WITH WATER AND ACIDS TO LIBERATE HEAT.

Potential Health Effects

Inhalation:

Caustic, irritant dust, may cause burning or discomfort in the respiratory passages. Coughing, sneezing and possible pain are symptoms.

SECTION 3 : HAZARDS IDENTIFICATION (cont.)

Ingestion:

Caustic alkaline action with possible irritation or burning of the mucous membrane in the mouth and esophagus. Abdominal pain, stricture, vomiting and diarrhea may follow the ingestion of appreciable amounts.

Skin Contact:

Caustic burns may occur on prolonged contact with moist skin. Reddening, soreness or possible damage to skin may occur.

Eye Contact:

Corrosive. May cause irritation, redness, pain, and eye damage.

Chronic Exposure:

May sequester calcium phosphate deposits in the kidneys. Chronic ingestion or inhalation may induce systemic phosphorous poisoning. Liver damage, kidney damage, jaw/tooth abnormalities, blood disorders and cardiovascular effects can result.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, jaw tooth abnormalities, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance..

SECTION 4 : FIRST AID MEASURES

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:

Perform endoscopy in all cases of suspected sodium hydroxide ingestion. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base balance, electrolytes, and fluid intake are also required.

SECTION 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. Adding water to caustic solution generates large amounts of heat.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Instructions:

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Do not flush caustic residues to the sewer. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Absorb neutralized caustic residue on clay, vermiculite or other inert substance and package in a suitable container for disposal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

SECTION 7 : HANDLING AND STORAGE

Instructions:

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibles. Always add the caustic to water while stirring; never the reverse. 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.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Limits:

Sodium hydroxide:

- OSHA Permissible Exposure Limit (PEL): 2 mg/m³ Ceiling
- ACGIH Threshold Limit Value (TLV): 2 mg/m³ Ceiling

Trisodium phosphate:

- AIHA Workplace Environmental Exposure Limit: 5 mg/m³ (15-minute STEL)

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION (cont.)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a full face piece respirator with high efficiency dust/mist filter may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full face piece, positive-pressure, air-supplied respirator. **WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.**

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible.. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Transparent, colorless crystals.

Odor: Odorless.

Solubility: 26 gm in 100gm of water @20C.

Density: 1.6

pH: 11.9 (1% aqueous solution)

% Volatiles by Volume@ 21C (70F): 0

Boiling Point: 100C (212F) Loses 12 H₂O (decomposes)

Melting Point: ca. 75C (ca. 167F)

Vapor Density (Air = 1): No information found.

Vapor Pressure (mm Hg): No information found.

Evaporation Rate (BuAc = 1): No information found.

SECTION 10 : STABILITY AND REACTIVITY

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Phosphorous oxides may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Reacts violently with water and acids to liberate heat.

Conditions to Avoid:

No information found.

SECTION 11 : TOXICOLOGICAL INFORMATION

Sodium Phosphate Tribasic Dodecahydrate:

Oral rat LD50: 7.4 g/kg

Anhydrous: Investigated as a mutagen.

Cancer Lists: NTP Carcinogen

Ingredient: Sodium Phosphate, Tribasic (7601-54-9)

Known: No

Anticipated: No

IARC Category: None

Ingredient: Sodium Hydroxide (1310-73-2)

Known: No

Anticipated: No

IARC Category: None

SECTION 12 : ECOLOGICAL INFORMATION

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

SECTION 13 : DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. 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.

SECTION 14 : TRANSPORT INFORMATION

Not regulated.

SECTION 15 : REGULATORY INFORMATION

Chemical Inventory Status - Part 1

Ingredient: Sodium Phosphate, Tribasic (7601-54-9)

TSCA: Yes

EC: Yes

Japan: Yes

Australia: Yes

Ingredient: Sodium Hydroxide (1310-73-2)

TSCA: Yes

EC: Yes

Japan: Yes

Australia: Yes

Chemical Inventory Status – Part 2

Ingredient: Sodium Phosphate, Tribasic (7601-54-9)

Korea: Yes

Canada DSL: Yes

Canada NDSL: No

Phil.: Yes

Ingredient: Sodium Hydroxide (1310-73-2)

Korea: Yes

Canada DSL: Yes

Canada NDSL: No

Phil.: Yes

SECTION 15 : REGULATORY INFORMATION (cont.)

Federal, State & International Regulations - Part 1 --- SARA 302 -----SARA 313

Ingredient: Sodium Phosphate, Tribasic (7601-54-9)

SARA 302 RQ: No

SARA 302 TPQ: No

SARA 313 List: No

SARA 313 Chemical Catg.: No

Ingredient: Sodium Hydroxide (1310-73-2)

SARA 302 RQ: No

SARA 302 TPQ: No

SARA 313 List: No

SARA 313 Chemical Catg.: No

Federal, State & International Regulations - Part 2

Ingredient: Sodium Phosphate, Tribasic (7601-54-9)

CERCLA: 5000

RCRA 261.33: No

TSCA 8(d): No

Ingredient: Sodium Hydroxide (1310-73-2)

CERCLA: 1000

RCRA 261.33: No

TSCA 8(d): No

Chemical Weapons Convention: No

TSCA 12(b): No

CDTA: No

SARA 311/312:

Acute: Yes

Chronic: Yes

Fire: No

Pressure: No

Reactivity: Yes (Mixture / Solid)

Australian Hazchem Code: No information found.

Poison Schedule: S5

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.

SECTION 16 : OTHER INFORMATION

NFPA Ratings:

Health: 3

Flammability: 0

Reactivity: 2

Label Hazard Warning:

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED. REACTS VIOLENTLY WITH WATER AND ACIDS TO LIBERATE HEAT.

Label Precautions:

Do not get in eyes, on skin, or on clothing.

Do not breathe dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Label First Aid:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.

Product Use:

Industrial chemical.

Revision Information:

No changes.

DISCLAIMER:

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**THE FOLLOWING COMPOUND IS FOUND IN OUR
SUBSTRATE FOR  ENA PRODUCTS**

SECTION 1 : PRODUCT IDENTIFICATION

Product Name: SIGMA 104 PHOSPHATASE SUBSTRATE

Crystalline, Sigma Grade

Product Number: Sigma 104-0

Manufacturer Information:

Sigma-Aldrich

3050 Spruce Street

Saint Louis, MO 63103

Technical PH: (314) 771-5765

Emergency PH: (414) 273-3850 (ext. 5996)

Fax:(800) 325-5052

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: 4-Nitrophenyl Phosphate Disodium salt

CAS No.: 4264-83-9

SARA 313: No

Molecular Weight: 371.1

Chemical Formula: C₆H₄NO₆ PNa₂ · 6 H₂O

SECTION 3 : HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Caution: Avoid contact and inhalation

	HMIS RATING	NFPA RATING	
HEALTH:	0		
FLAMMABILITY:	0	0	(For additional information on
REACTIVITY:	0	0	toxicity, 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 becomes difficult, call a physician.

SECTION 4 : FIRST AID MEASURES (cont.)

Dermal Exposure:

In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure:

In case of contact with eyes, immediately flush eyes with copious amounts of water for at least 15 minutes.

SECTION 5 : FIRE FIGHTING MEASURES

Autoignition Temp: N/A

Flammability: N/A

Extinguishing Media:

Suitable: Water spray, carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting:

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

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 contact and inhalation. Do not get in eyes, on skin, on clothing.

Storage:

Suitable: Keep tightly closed.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment:

Respiratory: NIOSH/MSHA-approved respirator

Hand: Rubber gloves.

Eye: Chemical safety goggles.

General Hygiene Measures:

Wash thoroughly after handling. Wash contaminated clothing before re-use.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Fine crystals

Color: Very faintly yellow color

pH: N/A.

Boiling Point: N/A

Melting Point: 300 ° C

Freezing Point: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Saturated Vapor Conc.: N/A

SG/Density: N/A

Flash Point °F: N/A

Flach Point °C: N/A

Solubility: N/A

Bulk Density: 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

Partition coefficient: N/A

Decomposition Temp: N/A

Explosion Limits: N/A

Autoignition Temp.: N/A

SECTION 10 : STABILITY AND REACTIVITY

Stability:

Stable: Stable.

Materials to Avoid: Strong oxidizing agents. Strong acids. Strong bases.

Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide, nitrogen oxides. Thermal decomposition may produce toxic fumes of phosphorus oxides and/or phosphine

Hazardous Polymerization:

Will not occur.

SECTION 11 : TOXICOLOGICAL INFORMATION

Route of Exposure:

Skin contact: May cause skin irritation.

Eye contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract.

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

Signs and Symptoms of Exposure:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: N/A

SECTION 12 : ECOLOGICAL INFORMATION

No data available

SECTION 13 : DISPOSAL CONSIDERATIONS

Appropriate Method of Disposal of Substance or Preparation:

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations.

SECTION 14 : TRANSPORT INFORMATION

DOT:

Proper shipping name: None

Non-hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA:

Proper shipping name: None

Non-hazardous for Transport: Non-hazardous for Air Transport.

SECTION 15 : REGULATORY INFORMATION

United States Regulatory Information:

SARA 313 Listed: NO

Notes: This product is subject to SARA section 313 reporting requirements.

SECTION 16 : OTHER INFORMATION

N/A

DISCLAIMER:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma- Aldrich, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product.

Prepared by: Sigma-Aldrich Inc.
Date Updated: 10/25/1999

**THE FOLLOWING COMPOUND IS USED AS A PRESERVATIVE IN
SAMPLE and TRACER DILUENTS, CONJUGATES, PREDILUTED STANDARDS
and CONTROLS, and WASH CONCENTRATES**

SECTION 1 : PRODUCT IDENTIFICATION

Product Name: Proclin 300 Preservative
Synonyms: Proclin 300, 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one
Product Number: 48127
CAS No.: 26172-55-4 and 2682-20-4
Chemical Formula: C₄H₄CINOS and C₄H₅NOS
Manufacturer: Supelco, Inc.
595 N. Harrison
Bellefonte, PA 16823-0048
PH: 814-359-3441

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Active Ingredients:	Percentage	PEL (Units)	TLV (Units)
5-chloro-2-methyl-4-isothiazolin-3-one:	2.1 – 2.9 %	N/A	0.1 MG/M3
2-methyl-4-isothiazolin-3-one:	0.6 – 1.1 %	N/A	0.1 MG/M3
Inerts:			
Modified Glycol:	91 – 94 %	N/A*	N/A*
Alkyl Carboxylate:	3.0 – 3.6 %	N/A*	N/A*

** This material is not listed on the TSCA (Toxic Substances Control Act) inventory. This material is intended for research use only and may not be used for drug, household, or other purposes. It is subject to TSCA regulations at CFR 40 Part 720.36 which deals with the exemption of chemicals used in research and development from PMN (Premanufacture Notification) requirements. In addition, the burden of safe use of the material rests with you and therefore, it should be handled only by qualified persons trained in laboratory procedures and good safety practices.*

SECTION 3 : HAZARDS IDENTIFICATION

Effects of Overexposure:
Burns eyes severely.
Harmful if swallowed.
Dermatitis.
Burns skin.
Systemic allergic reactions.

SECTION 4 : FIRST AID MEASURES (FOR EXPOSURE TO CONCENTRATED SOLUTION)

Inhalation:

Immediately move to fresh air.

Ingestion:

Never give anything by mouth to an unconscious person. Never try to make an unconscious person vomit. Give large amounts of water. Contact a physician.

Skin Contact:

Promptly wash skin with mild soap and large volumes of water.

Eye Contact:

Flush eyes with water for 15 minutes.

SECTION 5 : FIRE FIGHTING MEASURES (FOR CONCENTRATED SOLUTIONS)

Flash Point: 151° F **ASTM#:** 3278-78

Flammable Limits: LEL = not given UEL = not given

Fire Extinguishing Media:

Water, Carbon Dioxide, dry chemical powder or appropriate foam.

Unusual Fire and Explosion Hazards:

The following toxic vapors are formed when this material is heated to decomposition: hydrogen chloride, oxides of nitrogen and sulfur.

SECTION 6 : ACCIDENTAL RELEASE MEASURES (FOR CONCENTRATED SOLUTIONS)

Spills:

Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Swirl the solution and let stand for 30 minutes. Take up with absorbent material. Rinse the container or area with water several times. DISPOSE OF DEACTIVATED PROCLIN SOLUTION AND WATER IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

SECTION 7 : HANDLING AND STORAGE

Storage and Handling: Store in sealed container in cool, dry location. Keep away from moisture. Keep away from oxidizers.

Other Precautions: Avoid eye or skin contact. Avoid breathing vapors.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION (FOR CONCENTRATED SOLUTIONS)

Instructions:

Maintain safety showers and eye baths in work area. Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling. Do not breathe vapor. Do not get in eyes, on skin, or clothing. Avoid prolonged or repeated exposure.

Ventilation System:

Use only in a chemical fume hood. Keep tightly closed. Store in a cool dry place.

Personal Respirators:

Use only NIOSH/MSHA approved respirator.

Skin Protection:

Wear compatible chemical-resistant gloves and face shield (8-inch minimum).

Eye Protection:

Use chemical safety goggles.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light yellow liquid

Boiling Point: 189° C

Melting Point: -40° C

Vapor Pressure: 0.06 MM

Vapor Density (AIR = 1): > 1

Specific Gravity: 1.03 G/ml

C (water=1) Percent Volatile by Volume

Water Solubility: 100

Evaporation Rate: < 1.0 (butyl acetate = 1)

SECTION 10 : STABILITY AND REACTIVITY

Stability: Stable

Conditions to Avoid: N/A

Incompatibility: Oxidizing agents. Reducing agents. Amines. AVOID TEMPERATURES OVER 25C FOR PROLONGED PERIODS TO MINIMIZE DEGRADATION. CORRODES STEEL.
pH RANGE: 4.1 (10% solution)

Hazardous Decomposition Products: hydrogen chloride, oxides of nitrogen and sulfur.

Hazardous polymerization: Will not occur.

Conditions to Avoid: N/A

SECTION 11 : TOXICOLOGICAL INFORMATION

Oral Rat: LD50 = 3723 mg/kg
TLV: N/A
PEL: N/A

SECTION 12 : ECOLOGICAL INFORMATION

ProClin 300 preservative is toxic to fish. Do not discharge untreated preservative, or spills, into municipal sewers or other bodies of open water. Many reagents that contain recommended in use levels of Proclin 300 preservative may be safely discharged to a municipal sewer system without treatment. Studies have shown that biological processes in a waste treatment facility are unaffected by 2 ppm or less of the combined active biocides. Discharges that may result in higher concentrations at the plant should be neutralized first. (Rohm and Haas data sheet)

SECTION 13 : DISPOSAL CONSIDERATIONS

Waste Disposal Method:

COMPLY WITH ALL APPLICABLE FEDERAL, STATE, or LOCAL REGULATIONS.

Containers of this material may be hazardous when emptied. Emptied containers retain product residues; handle as if they were full.

SECTION 14 : TRANSPORT INFORMATION FOR CONCENTRATED SOLUTIONS

Contact Supelco, Inc. for transportation information.

SECTION 15 : REGULATORY INFORMATION

This product is subject to regulation under the US Federal Food, Drug and Cosmetic Act and is therefore exempt from US toxic substances control act (TSCA) inventory listing requirements.

SECTION 16: OTHER INFORMATION

N/A

DISCLAIMER :

While the information and recommendations set forth herein are believe to be accurate as of the date hereof, Supelco, Inc. makes no warranty with respect thereto and disclaims all liability from reliance thereon.

PROCLIN[®] 300 is a product of: Supelco, Inc.
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(814) 359-3441