
MATERIAL SAFETY DATA SHEETS FOR VZV IgG COMPONENTS:

Sodium Azide (Pgs. 2 - 8)
Hydrochloric Acid (Pgs. 9 - 17)
TMB (Pgs. 18 - 21)
Proclin 300 (Pgs. 22 - 25)
Phosphoric Acid (Pgs. 26 – 34)

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.

DISCLAIMER:

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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
STOP M, O AND P SOLUTIONS**

SECTION 1 : PRODUCT IDENTIFICATION

Synonyms: Muriatic acid; hydrogen chloride, aqueous

CAS No.: 7647-01-0

Molecular Weight: 36.46

Chemical Formula: HCL

Product Codes:

J.T. Baker: 5367, 5537, 5575, 5800, 5814, 5839, 6900, 7831, 9529, 9530, 9534, 9535, 9536, 9537, 9538, 9539, 9540, 9544, 9548

Mallinckrodt: 2062, 2612, 2624, 2626, 5587, H611, H613, H615, V078, V628

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

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Hydrogen Chloride

CAS No.: 7647-01-0

Percent: 33 - 40%

Hazardous: Yes

Ingredient: Water

CAS No.: 7732-18-5

Percent: 60 - 67%

Hazardous: No

SECTION 3 : HAZARDS IDENTIFICATION

Emergency Overview:

POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG DAMAGE.

SECTION 3 : HAZARDS IDENTIFICATION (cont.)

J.T. Baker SAF-T-DATA™ Ratings (Provided here for your convenience.)

Health Rating: 3 – Severe (Poison)

Flammable Rating: 0 - None

Reactivity Rating: 2 - Moderate

Contact Rating: 3 – Severe (Corrosive)

Lab Protective Equipment: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:

Corrosive! Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death.

Ingestion:

Corrosive! Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea.

Skin Contact:

Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.

Eye Contact:

Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burn and permanent eye damage.

Chronic Exposure:

Long-term exposure to concentrated vapors may cause erosion of teeth. Long-term exposures seldom occur due to the corrosive properties of the acid.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye disease 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:

DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

SECTION 4 : FIRST AID MEASURES (cont.)

Skin Contact:

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

Eye Contact:

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

SECTION 5 : FIRE FIGHTING MEASURES

Fire:

Extreme heat or contact with metals can release flammable hydrogen gas.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

If involved in a fire, use water spray. Neutralize with soda ash or slaked lime.

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. Structural firefighter's protective clothing is ineffective for fires involving hydrochloric acid. Stay away from ends of tanks. Cool tanks with water spray until well after fire is out.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Instructions:

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e.g., vermiculite, dry sand, earth), then place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush in sewer! 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.

J.T. Baker NEUTRASORB[®] or TEAM[®] 'Low Na+' acid neutralizers are recommended for spills of this product.

SECTION 7 : HANDLING AND STORAGE

Instructions:

Store in a cool, dry, ventilated area with acid resistant floors and good drainage. Protect container from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water in small amounts. Never use hot water and never add water to the acid. Water added to the acid can cause uncontrolled boiling and splashing. When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for this product.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL): 5 ppm Ceiling
- ACGIH Threshold Limit Value (TLV): 5 ppm Ceiling

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-facepiece respirator with an acid gas cartridge 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:

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure 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: Colorless, fuming liquid.
Odor: Pungent odor of hydrogen chloride.
Solubility: Infinite in water with slight evolution of heat.
Density: 1.18
pH: For HCL solutions; 0.1 (1.0 N), 1.1 (0.1 N), 2.02 (0.01 N)
% Volatiles by Volume@ 21C (70F): 100
Boiling Point: 53C (127F) Azeotrope (20.2%) boils at 109C (228F)
Melting Point: -74DC (-101F)
Vapor Density (Air = 1): No information found.
Vapor Pressure (mm Hg): 190 @ 25C (77F)
Evaporation Rate (BuAc = 1): No information found.

SECTION 10 : STABILITY AND REACTIVITY

Stability:
Stable under ordinary conditions of use and storage. Containers may burst when heated.

Hazardous Decomposition Products:
When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
A strong mineral acid, concentrated hydrochloric acid is incompatible with many substances and highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.

Conditions to Avoid:
Heat, direct sunlight.

SECTION 11 : TOXICOLOGICAL INFORMATION

Inhalation rat LD50: 3124 ppm/1H
Oral rabbit LD50: 990 mg/kg (hydrochloric acid concentrated)
Investigated as a tumorigen, mutagen, and reproductive effector.

SECTION 11 : TOXICOLOGICAL INFORMATION (cont.)

Cancer Lists: NTP Carcinogen

Ingredient: Hydrogen Chloride (7647-01-0)

Known: No

Anticipated: No

IARC Category: 3

Ingredient: Water (7732-18-5)

Known: No

Anticipated: No

IARC Category: None

SECTION 12 : ECOLOGICAL INFORMATION

Environmental Fate:

When released into the soil, this material is not expected to biodegrade. When released into the soil, this material is expected to leach into groundwater.

Environmental Toxicity:

This material is expected to be toxic to aquatic life.

SECTION 13 : DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14 : TRANSPORT INFORMATION

Domestic (Land, D.O.T.)

Proper Shipping Name: HYDROCHLORIC ACID

Hazard Class: 8

UN/NA: UN1789

Packing Group: II

Information reported for product/size: 475 LB

SECTION 14 : TRANSPORT INFORMATION (cont.)

International (Water, I.M.O)

Proper Shipping Name: HYDROCHLORIC ACID

Hazard Class: 8

UN/NA: UN1789

Packing Group: II

Information reported for product/size: 475 LB

SECTION 15 : REGULATORY INFORMATION

Chemical Inventory Status - Part 1

Ingredient: Hydrogen Chloride (7647-01-0)

TSCA: Yes

EC: Yes

Japan: Yes

Australia: Yes

Ingredient: Water (7732-18-5)

TSCA: Yes

EC: Yes

Japan: Yes

Australia: Yes

Chemical Inventory Status – Part 2

Ingredient: Hydrogen Chloride (7647-01-0)

Korea: Yes

Canada DSL: Yes

Canada NDSL: No

Phil.: Yes

Ingredient: Water (7732-18-5)

Korea: Yes

Canada DSL: Yes

Canada NDSL: No

Phil.: Yes

SECTION 15 : REGULATORY INFORMATION (cont.)

Federal, State & International Regulations - Part 1

Ingredient: Hydrogen Chloride (7647-01-0)
SARA 302 – RQ: 5000
SARA 302 – TPQ: 500*
SARA 313 – List: Yes
SARA 313 – Chemical Catg.: No

Ingredient: Water (7732-18-5)
SARA 302 – RQ: No
SARA 302 – TPQ: No
SARA 313 – List: No
SARA 313 – Chemical Catg.: No

Federal, State & International Regulations - Part 2

Ingredient: Hydrogen Chloride (7647-01-0)
CERCLA: 5000
RCRA - 261.33: No
TSCA – 8 (d): Yes

Ingredient: Water (7732-18-5)
CERCLA: No
RCRA - 261.33: No
TSCA – 8 (d): No

Chemical Weapons Convention: No

TSCA 12(b): No
CDTA: Yes

SARA 311/312:

Acute: Yes
Chronic: Yes
Fire: No
Pressure: No

Reactivity: No (Mixture/Liquid)

Australian Hazchem Code: 2R

Poison Schedule: No information found.

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: 0

Label Hazard Warning:

POISON! DANGER! CORROSIVE. LIQUID MAY CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG DAMAGE.

Label Precautions:

Do not get in eyes, on skin, or on clothing.
Do not breathe vapor or mist.
Use only with adequate ventilation.
Wash thoroughly after handling.
Store in tightly closed container.
Remove and wash contaminated clothing properly.

Label First Aid:

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. 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 to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get medical attention immediately.

Product Use:

Laboratory Reagent.

Revision Information:

N/A

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THE FOLLOWING COMPOUND IS FOUND IN OUR
HRP SUBSTRATE HRP

SECTION 1 : PRODUCT IDENTIFICATION

Name: 3,3',5,5' Tetramethylbenzidine Liquid Substrate System

CAS No.: 54827-17-7

Product #: TMBE- 25S

Manufacturer Information:

Moss, Inc.

P.O. Box 189

Pasadena, MD 21123

PH: (410) 768-3442

Toll-free: (800) 445-6447

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: 3,3',5,5' Tetramethylbenzidine

CAS No.: 54827-17-7

EC No.: 259-364-6

SECTION 3 : HAZARDS IDENTIFICATION

Label Precautionary Statements:

HARMFUL

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN.

AVOID CONTACT WITH METALS.

AIR AND LIGHT SENSITIVE.

REFRIGERATE FOR BEST STORAGE.

SECTION 4 : FIRST AID MEASURES

Eye Contact:

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

Skin Contact:

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

Ingestion:

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

SECTION 5 : FIRE FIGHTING MEASURES

Extinguishing Media:

Water spray. Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.
Use water spray to cool exposed containers.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Instructions:

Evacuate area and ventilate area. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Absorb on sand or vermiculite and place in closed containers for waste disposal. Avoid splashing.

SECTION 7 : HANDLING AND STORAGE

Instructions:

Refer to Section 8.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical safety goggles
NIOSH/MSHA-approved respirator
Use only in a chemical fume hood
Compatible chemical-resistant gloves
Avoid any skin or clothing contact.
Wash thoroughly after handling.
Keep tightly closed.
Refrigerate.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, very pale amber solution.
Melting/Freezing Point:	0° C (water)
Boiling Point:	100°C (water)
Solubility:	Dilutable in water

SECTION 10 : STABILITY AND REACTIVITY

Hazardous Combustion or Decomposition Products:

Toxic fumes of carbon monoxide, carbon dioxide, nitrous oxides, hydrogen chloride gas.

Incompatibles:

Bases, amines, alkali metals, copper and copper alloys.

SECTION 11 : TOXICOLOGICAL INFORMATION

Acute Effects:

Harmful if swallowed, inhaled, or absorbed through skin. Causes eye and skin irritation. Material is irritating and destructive to tissue of the mucous membranes and upper respiratory tract.

Chronic Effects:

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

RTECS #:

DV2300000

Toxicity Data:

See actual entry in RTECS for complete information.

SECTION 12 : ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 : DISPOSAL CONSIDERATIONS

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

SECTION 14 : TRANSPORT INFORMATION

Does not need to be shipped as hazardous.

Ship labeled "**Do Not Expose To Heat**".

May be shipped with ice or ice packs.

SECTION 15 : REGULATORY INFORMATION

Data not available.

SECTION 16 : OTHER INFORMATION

Good housekeeping procedures and laboratory practice is the best preventative. Use in well ventilated areas. Store in refrigerated conditions. Do not allow product to enter storm or sanitary sewers, lakes, rivers, streams, or public water supplies. Notify local authorities if this happens or is threatened.

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. Moss Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

Manufactured by: Moss Inc.,
P.O. Box 189, Pasadena,
MD 21123
PH: (410) 768-3442
Fax: (410)-768-3971

**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 CONTROL/PERSONAL PROTECTION

Respiratory Protection (Specific Type): Wear NIOSH/OSHA approved respiratory protection.

Protective GLOVES: Wear butyl rubber gloves.

Eye Protection: Wear face shield. Wear goggles.

Ventilation: Use only in well ventilated area. Use only in exhaust hood.

Special: N/A

Other Protective Equipment: N/A

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 C 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.
Bellefonte, PA 16823
Phone Number: (800) 359-3041
(814) 359-3441

MSDS-Proclin300-Rev0-Dec04

THE FOLLOWING COMPOUND IS FOUND IN OUR
STOP M SOLUTION

SECTION 1 : PRODUCT IDENTIFICATION

Synonyms: Ortho-phosphoric acid; white phosphoric acid

CAS No.: 7664-38-2

Molecular Weight: 98.00

Chemical Formula: H₃PO₄ in H₂O

Product Codes:

J.T. Baker: 0259, 0260, 0262, 0263, 0264, 0268, 0273, 0274, 5372, 5592, 5804, 5841, 6908

Mallinckrodt: 2779, 2788, 2796, 3563, H106

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

SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Phosphoric Acid

CAS No.: 7664-38-2

Percent: 55 – 95 %

Hazardous: Yes

Ingredient: Water

CAS No.: 7732-18-5

Percent: 5 - 45%

Hazardous: No

SECTION 3 : HAZARDS IDENTIFICATION

Emergency Overview:

DANGER! CORROSIVE. CAUSES SEVERE IRRITATION AND BURNS TO EVERY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED.

J.T. Baker SAF-T-DATA™ Ratings (Provided here for convenience)

Health Rating: 2 – Moderate

Flammability Rating: 0 – None

SECTION 3 : HAZARDS IDENTIFICATION (cont.)

Reactivity Rating: 2 – Moderate

Contact Rating: 3 – Severe (corrosive)

Lab Protective Equipment: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:

Inhalation is not an expected hazard unless misted or heated to high temperatures. Mist or vapor inhalation may cause irritation to the nose, throat, and upper respiratory tract. Severe exposures can lead to a chemical pneumonitis.

Ingestion:

Corrosive. May cause sore throat, abdominal pain, nausea, and severe burns of the mouth, throat, and stomach. Severe exposures can lead to shock, circulatory collapse, and death.

Skin Contact:

Corrosive, may cause redness, pain, and severe skin burns.

Eye Contact:

Corrosive. May cause redness, pain, blurred vision, eye burns, and permanent eye damage.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, or impaired 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. Call a physician 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. Call a physician immediately. Wash clothing before reuse.

Eye Contact:

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

SECTION 5 : FIRE FIGHTING MEASURES

Fire:

Not considered to be a fire hazard. Contact with most metals causes formation of flammable and explosive hydrogen gas.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool. If water is used, use in abundance to control heat and acid build-up.

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. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and protected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda, ash, lime) absorb with an inert material (e.g. vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush in sewer. 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, incompatibilities, and direct sunlight. Corrosive to mild steel. Store in rubber lined or 316 stainless steel designed for phosphoric acid. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Protect from freezing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL): 1 mg/m³ (TWA)
- ACGIH Threshold Limit Value (TLV): 1 mg/m³ (TWA), 3 mg/m³ (STEL)

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 facepiece 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 faceshield 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: Clear, colorless syrupy liquid.

Odor: Odorless.

Solubility: Miscible in all proportions in water.

Specific Gravity: 1.69 @ 25C

pH: 1.5 (0.1 N aqueous solution)

% Volatiles by Volume @ 21C (70F): 100

Boiling Point: 158C (316F)

Melting Point: 21C (70F)

Vapor Density (Air = 1): 3.4

Vapor Pressure (mm Hg): 0.03 @ 20C (68F)

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

SECTION 10 : STABILITY AND REACTIVITY

Stability:

Stable under ordinary conditions of use and storage. Substance can super cool without crystallizing.

Hazardous Decomposition Products:

Phosphorus oxides may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Liberates explosive hydrogen gas when reacting with chlorides and stainless steel. Can react violently with sodium tetrahydroborate. Exothermic reactions with aldehydes, amines, amides, alcohols and glycols, azo-compounds, carbamates, esters, caustics, phenols and cresols, ketones, organophosphates, epoxides, explosives, combustible materials, unsaturated halides, and organic peroxides. Phosphoric acid forms flammable gases with sulfides, mercaptans, cyanides and aldehydes. It also forms toxic fumes with cyanides, sulfide, fluorides, organic peroxides, and halogenated organics. Mixtures with nitromethane are explosive.

Conditions to Avoid:

Incompatibles.

SECTION 11 : TOXICOLOGICAL INFORMATION

Oral rat LD50: 1530 mg/kg

Anhydrous: Investigated as a mutagen.

Cancer Lists: NTP Carcinogen Ingredients

Ingredient: Phosphoric Acid (7664-38-2)

Known: No

Anticipated: No

IARC Category: None

Ingredient: Water (7732-18-5)

Known: No

Anticipated: No

IARC Category: None

SECTION 12 : ECOLOGICAL INFORMATION

Environmental Fate:

When released into the soil, this material may leach into groundwater. When released to water, acidity may be readily reduced by natural water hardness minerals. The phosphate, however, may persist indefinitely.

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 a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14 : TRANSPORT INFORMATION

Domestic (Land, D.O.T.)

Proper Shipping Name: PHOSPHORIC ACID
Hazard Class: 8
UN/NA: UN1805
Packing Group: III
Information reported product/size: 350LB

International (Water, I.M.O.)

Proper Shipping Name: PHOSPHORIC ACID, LIQUID
Hazard Class: 8
UN/NA: UN1805
Packing Group: III
Information reported for product/size: 350LB

SECTION 15 : REGULATORY INFORMATION

Chemical Inventory Status - Part 1

Ingredient: Phosphoric Acid (7664-38-2)

TSCA: Yes
EC: Yes
Japan: Yes
Australia: Yes

Ingredient: Water (7732-18-5)

TSCA: Yes
EC: Yes
Japan: Yes
Australia: Yes

SECTION 15 : REGULATORY INFORMATION (cont.)

Chemical Inventory Status – Part 2

Ingredient: Phosphoric Acid (7664-38-2)

Korea: Yes

Canada DSL: Yes

Canada NDSL: No

Phil.: Yes

Ingredient: Water (7732-18-5)

Korea: Yes

Canada DSL: Yes

Canada NDSL: No

Phil.: Yes

Federal, State & International Regulations - Part 1

Ingredient: Phosphoric Acid (7664-38-2)

SARA 302 RQ: No

SARA 302 TPQ: No

SARA 313 List: No

SARA 313 Chemical Catg.: No

Ingredient: Water (7732-18-5)

SARA 302 RQ: No

SARA 302 TPQ: No

SARA 313 List: No

SARA 313 Chemical Catg.: No

Federal, State & International Regulations - Part 2

Ingredient: Phosphoric Acid (7664-38-2)

CERCLA: 5000

RCRA 261.33: No

TSCA 8(d): No

Ingredient: Water (7732-18-5)

CERCLA: No

RCRA 261.33: No

TSCA 8(d): No

SECTION 15 : REGULATORY INFORMATION (cont.)

Chemical Weapons Convention: No

TSCA 12(b): No

CDTA: No

SARA 311/312:

Acute: Yes

Chronic: No

Fire: No

Pressure: No

Reactivity: No (Pure/Liquid)

Australian Hazchem Code: 2R

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: 0

Label Hazard Warning:

DANGER! CORROSIVE. CAUSES SEVERE IRRITATION AND BURNS TO EVERY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED.

Label Precautions:

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

Keep container closed.

Use only with adequate ventilation.

Do not breathe dust vapor or mist.

Wash thoroughly after handling.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. 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 all cases call a physician immediately.

SECTION 16 : OTHER INFORMATION (cont.)

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 2,9

DISCLAIMER:

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