

**MATERIAL SAFETY DATA SHEETS FOR  
anti-dsDNA COMPONENTS:**

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

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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:** NaN<sub>3</sub>

**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/m<sup>3</sup>, 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 HN<sub>3</sub>-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**  
**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<sup>®</sup> or TEAM<sup>®</sup> '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  
**T** 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**

<b>Appearance:</b>	Clear, very pale amber solution.
<b>Melting/Freezing Point:</b>	0° C (water)
<b>Boiling Point:</b>	100°C (water)
<b>Solubility:</b>	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:** C<sub>4</sub>H<sub>4</sub>CINOS and C<sub>4</sub>H<sub>5</sub>NOS

**Manufacturer:** Supelco, Inc.

595 N. Harrison  
Bellefonte, PA 16823-0048  
PH: 814-359-3441

**SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Active Ingredients:</b>	<b>Percentage</b>	<b>PEL (Units)</b>	<b>TLV (Units)</b>
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
<b>Inerts:</b>			
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<sup>®</sup> 300 is a product of: Supelco, Inc.  
Bellefonte, PA 16823  
Phone Number: (800) 359-3041  
(814) 359-3441

MSDS-Proclin300-Rev0-Dec04