



MATERIAL SAFETY DATA SHEET

Based on U.S. Department of Labor
Occupational Safety and Health Administration
Form OMB NO. 1218-0072

TELEPHONE NUMBER OF INFORMATION: 1-800-606-6246
EMERGENCY TELEPHONE NUMBER: 1-760-929-9911
DATE PREPARED: June 01, 2009

TRADE NAME: PowerWater® DNA Isolation Kit
CATALOG NUMBER(S): 14900
DATE OF ISSUE: June 01, 2009
DATE OF REVIEW: September 24, 2010

SECTION 1 - MATERIAL IDENTIFICATION

CHEMICAL NAME: Garnet Beads, 0.15 & 0.70 mm
TRADE NAME: PowerWater® Bead Tubes

SECTION 2 - COMPOSITION/IDENTITY INFORMATION

CAS No.: N/A
Molecular Weight: N/A
Chemical Formula: Proprietary material
Synonyms: Garnet Bead Tubes, Water DNA Bead Tubes

SECTION 3 – HAZARDS INFORMATION

Chronic Exposure: None are known. Use care to limit possible exposure to nuisance dust during blast cleaning, if applicable.
Acute Exposure: None are known. Use care to limit possible exposure to nuisance dust during blast cleaning, if applicable.
Symptoms of Exposure: Exposure to nuisance dust may cause eye, throat or lung irritation, coughing or shortness of breath.
Aggravation of Pre-existing Conditions: Chronic bronchitis, emphysema and other lung diseases may be aggravated by exposure to nuisance dust.

Carcinogenicity:	IARC Monographs?	OSHA Regulations
Crystalline silica (quartz) Contains <0.5%	No. 42 N/A	0.1 mg/m ³

SECTION 4 – FIRST AID MEASURES

Inhalation: This is a possible route of entry.
Ingestion: This is a possible route of entry. **Do not eat.** Do not use around designated eating areas or any area where accidental ingestion may occur.
Skin Contact: This is not known to be a route of entry however, we recommend the use of gloves, lab safety glasses, lab coat and any other appropriate personal protective equipment when using this or any other reagent. Wash affected area with soap and water.
Eye Contact: This is a possible route of entry. Always wear lab safety goggles among any other appropriate personal protective equipment when using this or any other reagent. Wash eyes to flush out dust particles.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

Flash Point: Material is a non-flammable solid.
Flammable Limits: n/a **LEL:** n/a **UEL:** n/a
Explosion: Material is a non-flammable solid.
Fire Extinguishing Media: Use extinguishing media appropriate for the surrounding fire.
Special Fire Fighting Procedures: In the event of a fire, use procedures appropriate for the surrounding fire. All fire fighters should wear the appropriate personal protective equipment to protect them from nuisance dust.
Unusual Fire and Explosion Hazards: None.

SECTION 6 –STABILITY AND REACTIVITY DATA

Stability: INERT.
Conditions to Avoid: This material is an inert, stable solid needing no special handling in normal use.
Incompatibility (Materials to Avoid): None known.



Hazardous Decomposition or Byproducts: None known.
Hazardous Polymerization: Will not occur

SECTION 7 – PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT AT 1 ATM, DEG F:	N/A
VAPOR PRESSURE (mm Hg):	N/A
VAPOR DENSITY (AIR = 1):	N/A
SOLUBILITY IN WATER:	insoluble
APPEARANCE AND ODOR:	Deep red to pink colored solid, no odor
SPECIFIC GRAVITY (H ₂ O = 1):	4.0 – 4.1
MELTING POINT:	N/A
EVAPORATION RATE (Bu Ac = 1)	N/A
VOLATILES, % BY VOLUME:	N/A
MOLECULAR WEIGHT:	N/A

SECTION 8 – ACCIDENTAL RELEASE MEASURES

No special precautions are necessary. Always wear appropriate personal protective equipment as needed. Sweep or vacuum up spills for recovery or disposal and place in a closed container. Be careful not to generate dust during clean up.

SECTION 9 – HANDLING AND STORAGE

No special precautions are necessary for handling and storage. Use good housekeeping practices to reduce dust; use approved hand, eye and respiratory protection when handling material. Use material ONLY for the purposes intended. Incorporate methods of dust control to maintain airborne dust within federal or local TLV limits.

SECTION 10 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits: N/A

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposure as low as possible when blast cleaning. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminate 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): For conditions of use where exposure to dust is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. Warning: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate.

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.

Other Protective Equipment: Hearing protection when working near blast cleaning operation.

SECTION 11 – DISPOSAL CONSIDERATIONS

Follow local, state and federal guidelines for disposal of inert solid waste. **Note:** Material contaminated in use may require special handling.

SECTION 12 – TRANSPORT INFORMATION

Not regulated.

SECTION 13 – TOXICOLOGICAL INFORMATION

None available.

SECTION 14 – ECOLOGICAL INFORMATION

None available.



SECTION 15 – REGULATORY INFORMATION

None available.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION: June 01, 2009

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DATE PREPARED: June 01, 2009

SECTION 1 - MATERIAL IDENTIFICATION

CHEMICAL NAME: Aqueous solution of Guanidine Thiocyanate, Ammonium Acetate and other proprietary, non-hazardous salts.

TRADE NAME: Solution PW1

SECTION 2 - COMPOSITION/IDENTITY INFORMATION

Name: Guanidine Thiocyanate

CAS No.: 593-84-0

Molecular Weight: N/A

Chemical Formula: NH₂C (: NH) NH₂.CHNS

Synonyms: Thiocyanic acid, compounded with guanidine (1:1); Guanidine monothiocyanate; Guanidium thiocyanate; Guanidine Isothiocyanate

NAME: Ammonium Acetate

MF: CH₃CO₂NH₄

CAS-NO.: 631-61-8

RTECS NO.: AF1225000

WARNING: Combustible (USA Definition), flammable(European Definition), corrosive.

HEALTH HAZARD DATA: Harmful if swallowed, inhaled, or absorbed through skin. Material is destructive to tissue of mucous membranes and upper respiratory tract. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Material is destructive to eyes and skin.

TOXICITY: ORL-RAT LD50: 3310 mg/kg DMDJAP 31,276,59

IHL-MUS LD50: 56200 ppm/h MELAAD 48,559,57

IVN-MUS LD50: 525 mg/kg APTOA6 18,141,61

SKN-RBT LD50: 1060 mg/kg UCDS 8/7/63

SECTION 3 – HAZARD INFORMATION

Emergency Overview: Harmful if swallowed, causes irritation to skin, eyes and respiratory tract. **DO NOT ADD TO BLEACH!**

Potential Health Effects: Information on the health effects from exposure to this substance is limited. The health effects given below are those of soluble thiocyanate salts. The health effects of this substance are expected to be similar.

Inhalation: Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Ingestion: May cause psychosis, vomiting, disorientation, weakness, low blood pressure, convulsions and death which may be delayed.

Skin Contact: Causes irritation to skin. Symptoms include redness, itching and pain.

Eye Contact: Causes irritation, redness and pain.

Chronic Exposure: Prolonged or repeated skin exposure may cause dermatitis. Repeated ingestion of small amounts may cause weakness, confusion, central nervous system effects, nausea and skin eruptions.

Aggravation of Pre-existing Conditions: No information found.

Corrosive. Causes burns. Harmful by inhalation and if swallowed. Irritating to the eyes and skin. Labeling: C Xn, corrosive, harmful, R 34-20/22-36/38

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.

Ingestion: Induce vomiting immediately as directed by medical personnel. Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person.

Skin Contact: Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothes and shoes. Get medical attention. 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.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

Fire: Possible at elevated temperatures or by contact with an ignition source.

Explosion: Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

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Fire Extinguishing Media: Water spray, dry chemical, alcohol foam or carbon dioxide.

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. May emit toxic and flammable fumes of cyanide if involved in a fire.

SECTION 6 – STABILITY AND REACTIVITY DATA

Stability: Stable under ordinary conditions of use and storage.

Conditions to Avoid: Heat, flames, ignition sources and incompatibles. Strong oxidizing agents.

Incompatibility (Materials to Avoid): Strong oxidizing agents and strong acids, Iron. **Do not allow to come in contact with Bleach.**

Hazardous Decomposition or Byproducts: Cyanide fumes if burning, Carbon monoxide, Carbon dioxide, Nitrogen oxides and Sulfur oxides

Hazardous Polymerization: Will not occur

SECTION 7 – PHYSICAL/CHEMICAL CHARACTERISTICS

Guanidine Thiocyanate

BOILING POINT AT 1 ATM, DEG F:	N/A
VAPOR PRESSURE (mm Hg):	N/A
VAPOR DENSITY (AIR = 1):	N/A
SOLUBILITY IN WATER:	Soluble liquid
APPEARANCE AND ODOR:	Clear, colorless and odorless liquid.
SPECIFIC GRAVITY (H2O = 1):	N/A
MELTING POINT:	N/A
EVAPORATION RATE (BUTYL ACETATE = 1)	N/A
VOLATILES, % BY VOLUME:	N/A
MOLECULAR WEIGHT:	N/A

Ammonium Acetate

PHYSICAL STATE / FORM:	Liquid
COLOR:	Colorless
ODOR:	None
pH FACTOR:	(20°C) 5.0-5.75
VISCOSITY:	(20°C) N/A
MELTING POINT:	N/A
BOILING POINT:	N/A
IGNITION TEMPERATURE:	N/A
FLASHPOINT:	>200°F(>93.3°C)
EXPLOSION LEVEL:	LOWER:N/A UPPER:N/A
VAPOR PRESSURE:	(20°C) N/A
SPECIFIC GRAVITY:	(20°C) N/A
SOLUBILITY IN WATER:	(20°C) Soluble

SECTION 8 – ACCIDENTAL RELEASE MEASURES

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 10. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

SECTION 9 – HANDLING AND STORAGE

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from oxidizing materials. 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 10 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits: N/A

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposure as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminate 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): For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. Warning: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

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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 11 – DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal 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 12 – TRANSPORT INFORMATION

Not regulated.

SECTION 13 – TOXICOLOGICAL INFORMATION

Guanidine Thiocyanate

No LD50/LC50 information found relating to normal routes of occupational exposure.

NTP Carcinogen:

Known: No

Anticipated: No

TARC Category: None

Ammonium Acetate

TOXICITY DATA: See Section II, Composition/Information on Ingredients.

ACUTE EFFECTS INHALATION: May be harmful by inhalation.

EYE CONTACT: Material is destructive to eyes.

SKIN CONTACT: Material is destructive to skin, harmful by skin absorption.

INGESTION: Harmful if swallowed.

PROLONGED EXPOSURE: N/A

CHRONIC EFFECTS: N/A

RTECS number: N/A

ADDITIONAL INFORMATION: The product should be handled with the normal caution accorded chemicals. Additional harmful properties cannot be ruled out.

SECTION 14 – ECOLOGICAL INFORMATION

Environmental Fate: No information found

Environmental Toxicity: No information found

SECTION 15 – REGULATORY INFORMATION

Guanidine Thiocyanate

Chemical Inventory Status – Part 1

TSCA: Yes

EC: Yes

Japan: No

Australia: Yes

Chemical Inventory Status – Part 2

Korea: No

Canada DSL: Yes

Canada NDSL: No

Phil.: Yes

Federal, State and International Regulations – Part 1

SARA 302

RQ: No

TPQ: No

SARA 313

List: No

Chemical Catg.: No

Federal, State and International Regulations – Part 2

CERCLA: No



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: No

Australian Hazchem Code: None allowed.
Poison Schedule: None allocated.

Ammonium Acetate
LABELING: C Xn, corrosive, harmful, R 34-20/22-36/38.

SECTION 16 – OTHER INFORMATION

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SECTION 1 - MATERIAL IDENTIFICATION

CHEMICAL NAME: Proprietary
TRADE NAME: Solution PW2

SECTION 2 - COMPOSITION/IDENTITY INFORMATION

Synonyms: Solution PW2

Chemical Characterization: Proprietary

Hazardous Components: According to the OSHR 29 CFR 1910.1200, a mixture that contains less than one percent by weight or volume of a non-carcinogenic hazardous component is not considered hazardous, unless there is evidence to the contrary. We do not consider Solution PW2 to be hazardous, however we recommend the use of gloves, lab coats, and eye protection when working with these or any chemical reagents.

SECTION 3 – HAZARD INFORMATION

Label Precautionary Statements

- Corrosive
- Causes burns.
- Harmful by inhalation, in contact with skin and if swallowed.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Take off immediately all contaminated clothing.
- Wear suitable protective clothing, gloves and eye/face protection.

SECTION 4 – FIRST AID MEASURES

Inhalation: Remove to fresh air. If not breathing give artificial respiration.

If Breathing is Difficult: Give oxygen.

Ingestion: Wash out mouth with water provided if person is conscious. Call a physician immediately.

Skin Contact: Flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Contact: Flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

Extinguishing Media: Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

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

Unusual Fire and Explosions Hazards: Emits toxic fumes under fire conditions.

SECTION 6 –STABILITY AND REACTIVITY DATA

Stability: Stable.

Incompatibilities / Reacts with: Aluminum, strong bases, zinc, steel and copper

Hazardous Combustion or Decomposition Products: Ammonia, sulfur oxides and aluminum oxide

Hazardous Polymerization: Will not occur.

SECTION 7 – PHYSICAL/CHEMICAL CHARACTERISTICS

PHYSICAL STATE / FORM:	Liquid
COLOR:	Colorless
ODOR:	None
pH FACTOR:	(20°C)
VISCOSITY:	(20°C) N/A
MELTING POINT:	N/A
BOILING POINT:	N/A

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IGNITION TEMPERATURE: N/A
FLASHPOINT: N/A
EXPLOSION LEVEL: LOWER: N/A
UPPER: N/A
VAPOR PRESSURE: (20°C) N/A
SPECIFIC GRAVITY: (20°C) N/A
SOLUBILITY IN WATER: (20°C) Soluble

SECTION 8 – ACCIDENTAL RELEASE MEASURES

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

Clean-up Procedures: Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

SECTION 9 – HANDLING AND STORAGE

Storage: Store at room temperature.

SECTION 10 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical safety goggles. Rubber gloves. NIOSH / MSHA-Approved respirator. Safety shower and eye bath. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing.

SECTION 11 – DISPOSAL CONSIDERATIONS

For small quantities flush down sink with water. Observe all federal, state, and local laws.

SECTION 12 – TRANSPORT INFORMATION

Not regulated.

SECTION 13 – TOXICOLOGICAL INFORMATION

ACUTE EFFECTS:

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin.

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

Causes burns.

Harmful if absorbed through skin.

Harmful if inhaled.

SECTION 14 – ECOLOGICAL INFORMATION

N/A

SECTION 15 – REGULATORY INFORMATION

EUROPEAN INFORMATION

Caution: substance not yet fully tested.

Corrosive

R: 34

Causes burns.

S: 36/37/39

Wear suitable protective clothing, gloves and eye/face protection.

SECTION 16 – OTHER INFORMATION

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SECTION 1 - MATERIAL IDENTIFICATION

CHEMICAL NAME: Aqueous solution of Guanidine Thiocyanate and other proprietary nonhazardous salts in ethanol
TRADE NAME: Solution PW3

SECTION 2 - COMPOSITION/IDENTITY INFORMATION

HAZARDOUS COMPONENTS:

Name: Guanidine Thiocyanate
Health Rating: 2-Moderate
Flammability Rating: 0-None
Reactivity Rating: 1-Slight
Contact Rating: 2-Moderate
Protective Lab Equipment Recommended: Safety Goggles, Lab Coat, Vent Hood, Proper Gloves
Storage Color Code: Orange (General Storage)

Name: Ethanol
CAS#: 64-17-5
MF: CH₃CH₂OH
Synonyms:
Ethyl Alcohol Absolute; Dehydrated Ethanol; Anhydrous Ethanol, Methylated Spirits

SECTION 3 – HAZARD INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation: Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. High vapor concentration may cause burning sensation in nose and throat and stinging and watering in the eyes. At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea and vomiting may also occur.

Ingestion: May cause psychosis, vomiting, disorientation, weakness, low blood pressure, convulsions and death which may be delayed. The possible lethal dose is >1 ml. May cause dizziness, faintness, drowsiness, decreased awareness or responsiveness, nausea, vomiting, staggering gait, lack of coordination, and coma

Skin Contact: Causes irritation to skin. Symptoms include redness, itching and pain.

Eye Contact: Causes irritation, redness and pain.

Chronic Exposure: Prolonged or repeated skin exposure may cause dermatitis. Repeated ingestion of small amounts may cause weakness, confusion, central nervous system effects, nausea and skin eruptions. Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis. : Repeated exposure to ethanol may aggravate liver injury produced from other causes.

Aggravation of Pre-existing Conditions: No information available.

Other Health Hazards: Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders and small size head.

SECTION 4 – FIRST AID MEASURES

Obtain medical attention for all cases of over-exposure.

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

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Skin Contact: Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. 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: Symptoms vary with alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.5-1.5%. Approximately 25% of individuals show signs of intoxication at these levels. Above 0.15% the person is definitely under the influence of ethanol; 50-95% of individuals are clinically intoxicated at these levels. Severe poisoning occurs when the blood ethanol level is 0.3-0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

Fire/Explosive Properties

Flash Point: 58°F (14°C) Tag Closed Cup
70°F (21°C) Tag Open Cup

Flammable Limits in Air: 3.3-19.0% (by volume)

Flammability Classification: 3 (NFPA)

1993 Emergency Response Guidebook: Guide 26

1996 North American Emergency Response Guidebook: Guide 127

Extinguishing Media: Apply alcohol-type or all-purpose foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

Special Fire Fighting Procedures: Use water spray to cool fire-exposed containers and structures; Use water spray to disperse vapors – re-ignition is possible; Use self-contained breathing apparatus and protective clothing.

Unusual Fire and Explosion Hazards:

-Vapors may travel to source of ignition and flash back.

-Vapors may settle in low or confined spaces.

-May produce a floating fire hazard.

-Static ignition hazard can result from handling and use.

UNUSUAL FIRE AND EXPLOSION HAZARDS: In the event of a fire, this product may emit toxic and/or flammable fumes.

SECTION 6 –STABILITY AND REACTIVITY DATA

STABILITY: Stable under ordinary conditions of use and storage.

CONDITIONS TO AVOID: Heat, flames, ignition sources and incompatibles.

INCOMPATIBILITY (MATERIALS TO AVOID): Iron and oxidizing agents. Strong oxidizing agents; strong inorganic acids

HAZARDOUS DECOMPOSITION PRODUCTS: Burning may produce fumes of cyanide, carbon monoxide, carbon dioxide, nitrogen oxides and sulfur oxides.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 7 – PHYSICAL/CHEMICAL CHARACTERISTICS

Ethanol

BOILING POINT @ 760 mm Hg: 78.3° C (172.9° F)

VAPOR PRESSURE (mm Hg): @20°C: 44.6 mm Hg

VAPOR DENSITY (AIR = 1): 1.6

SOLUBILITY IN WATER: 100% @ 20°C

APPEARANCE AND ODOR: Clear and colorless liquid, characteristic

FREEZING POINT: -114.1° C ((-173.4°F)

SPECIFIC GRAVITY: 0.7906 @ 20/20°C

DENSITY @ 15.56C 6.61 lbs/gal

EVAPORATION RATE: 3.3 (butyl acetate = 1

PERCENT VOLATILES: 100%

SECTION 8 –ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment as specified in Section 8, Spills: Use non-sparking tools and equipment. Pick up spill for recovery or disposal and place in a closed container. Small spills can be flushed with large amounts of water. Large spills: Eliminate all ignition sources; ground all equipment; do not walk through spill; stop spill if possible; prevent entry into sewers, confined spaces, etc.; use a vapor suppressing foam to reduce vapors; absorb spill with non-combustible matter and transfer to containers; use non-sparking tools to collect absorbed material.

SECTION 9 – HANDLING AND STORAGE

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Isolate from incompatible substances. Isolate from oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for this product.

-Flammable material – keep away from heat, sparks, and flame; sudden releases of hot organic vapors or mists from process equipment operating at elevated temperature may result in ignitions without the presence of obvious ignition sources.

- Avoid contact with eyes.

-Keep container closed.

-Use with adequate ventilation.

- Ground container when transferring product.

-Vapors may collect in containers; treat empty containers as hazardous.

-Wash thoroughly after handling.

-Vapors may settle in low or confined areas

SECTION 10 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits: None established.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. 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): For conditions, of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face 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 an eye wash fountain and quick-drench facilities in work area.

SECTION 11 – DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal 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. Vapors may collect in empty containers. Treat empty containers as hazardous. Dispose of spill-clean up and other wastes in accordance with Federal, State, and local regulations.

SECTION 12 – TRANSPORT INFORMATION

Proper Shipping Name: Ethyl Alcohol

Hazard Class: 3

Un Number: 1170

IMO Information: Ethanol or ethanol solutions

Label of Class: 3

Packing group II

Intermediate flashpoint group

SECTION 13 – TOXICOLOGICAL INFORMATION

No LD50/LC50 information found relating to normal routes of occupational exposure.

NTP Carcinogen: Known: NO

Anticipated: NO

TARC Category: None

SECTION 14 – ECOLOGICAL INFORMATION

Environmental Fate: No information found

Environmental Toxicity: No information found

SECTION 15 – REGULATORY INFORMATION

Guanadine Thiocyanate

TSCA: Yes EC: Yes Japan: No Australia: Yes

Korea: No Canada: DSL: Yes Canada: NDSL: No Phil.: Yes

Federal, State and International Regulations:

SARA302 SARA313

RQ: No TPQ: No List: No Chemical Catalog: No

CERCLA: No 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: No (Pure/Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

Ethanol

Federal EPA

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA): No Chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on threshold planning quantities and release reporting based on reportable quantities in 40 CFR 355 (used for SARA 302, 304, 311, 312). Based upon available information, this material is classified as the following health and/or physical hazard according to section 311 & 312.



Immediate (Acute) Health Hazard.
Delayed (Chronic) Health Hazard.
Fire Hazard.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313): This material does not contain any chemical components with known CAS numbers that exceed the reporting limits.

Toxic Substances Control Act (TSCA) Status. All components of this product are listed or are exempt from listing on the TSCA inventory.

State Right to Know: No components of this product are listed on the California Prop 65 lists.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION: June 01, 2009

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**MATERIAL SAFETY DATA SHEET**

Based on U.S. Department of Labor
Occupational Safety and Health Administration
Form OMB NO. 1218-0072

TELEPHONE NUMBER OF INFORMATION: 1-800-606-6246

EMERGENCY TELEPHONE NUMBER: 1-760-929-9911

DATE PREPARED: June 01, 2009

SECTION 1 - MATERIAL IDENTIFICATION**CHEMICAL NAME:** Aqueous solution of Isopropyl Alcohol and nonhazardous, proprietary salts**TRADE NAME:** Solution PW4**SECTION 2 - COMPOSITION/IDENTITY INFORMATION****CAS #:** 67-63-0**Molecular Weight:** 60.10**Chemical Formula:** (CH₃)₂CHOH**Synonyms:** Isopropyl alcohol; Isopropanol; sec-propyl alcohol; sec-propanol; dimethylcarbinol**Chemical Characterization:** Isopropyl Alcohol**SECTION 3 – HAZARD INFORMATION****Emergency Overview:** Warning! Flammable liquid and vapor. Harmful if swallowed or inhaled. Causes irritation to eyes and respiratory tract. Affects central nervous system. May be harmful if absorbed through skin. May cause irritation to skin.**Potential Health Effects:****Inhalation:** Inhalation of vapors irritates the respiratory tract. Exposure to high concentrations has a narcotic effect, producing symptoms of dizziness, drowsiness, headache, staggering, unconsciousness and possibly death.**Ingestion:** Can cause drowsiness, unconsciousness and death. Gastrointestinal pain, cramps, nausea, vomiting and diarrhea may also result. The single lethal dose for a human adult = about 250ml (8 ounces).**Skin Contact:** May cause irritation with redness and pain. May be absorbed through the skin with possible systematic effects.**Eye Contact:** Vapors may cause irritation. Splashes cause severe irritation, possible corneal burns and eye damage.**Chronic Exposure:** Chronic exposure may cause skin effects.**Aggravation of Pre-existing Conditions:** Persons with pre-existing skin disorders or impaired liver, kidney or pulmonary function may be more susceptible to the effects of this solution.**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.**Ingestion:** Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.**Skin Contact:** Immediately flush with plenty of water for at least 15 minutes. Call a physician if irritation develops.**Eye Contact:** Immediately flush with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.**SECTION 5 - FIRE AND EXPLOSION HAZARD DATA****Fire:**

Flash point: 12°C (54°F) CC

Autoignition temperature: 399°C (750°F)

Flammable limits in air % by volume: lel: 2.0; uel: 12.7

Listed fire data is for Pure Isopropyl Alcohol.

Explosion: Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Contact with strong oxidizers may cause fire or explosion. Vapors can flow along surfaces to distant ignition sources and flash back. Sensitive to static discharge.**Extinguishing Media:** Water spray, dry chemical, alcohol foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.**Special Firefighting Procedures:** 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 –STABILITY AND REACTIVITY DATA****Stability:** Stable under ordinary conditions of use and storage. Heat and sunlight can contribute to instability.**Incompatibilities:** Heat, flame, strong oxidizers, acetaldehyde, acids, chlorine, ethylene oxide, hydrogen-palladium combination, hydrogen peroxide-sulfuric acid combination, potassium tert-butoxide, hypochlorous acid, isocyanates, nitroform, phosgene, aluminum, oleum and perchloric acid.



Hazardous Decomposition Products: Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Heat, flames, ignition sources and incompatibilities.

SECTION 7 – PHYSICAL/CHEMICAL CHARACTERISTICS

PHYSICAL STATE / FORM:	Liquid
COLOR:	Clear, Colorless
ODOR:	Rubbing alcohol
pH FACTOR:	No information found
VISCOSITY:	No information found
MELTING POINT:	-89°C (-128°F)
BOILING POINT:	82°C (180°F)
SPECIFIC GRAVITY:	0.79 @ 20°C/4°C
SOLUBILITY:	Miscible in water
VAPOR PRESSURE (mm Hg):	44 @ 25°C (77°F)
VAPOR DENSITY (Air=1):	2.1
% VOLATILES BY VOLUME:	100 @ 21°C (70°F)
EVAPORATION RATE (BuAc = 1):	2.83

SECTION 8 – ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 10. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or 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 to sewer! If leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

SECTION 9 – HANDLING AND STORAGE

Protect against physical damage. Store in cool, dry, well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibilities. Containers should be bonded and grounded to transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. 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. Small quantities of peroxides can form on prolonged storage. Exposure to light and/or air significantly increases the rate of peroxide formation. If evaporated to a residue, the mixture of peroxides and isopropyl alcohol may explode when exposed to heat or shock.

SECTION 10 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits:

For isopropyl Alcohol (2-propanol):

-OSHA Permissible Exposure Limit (PEL): 400ppm (TWA)

-ACGIH Threshold Limit Value (TLV): 200ppm (TWA), 400ppm (STEL), A4 – not classifiable as a human carcinogen.

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 organic vapor 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: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Neoprene and nitrile rubber are recommended materials.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 11 – 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 of 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 12 – TRANSPORT INFORMATION

Proper Shipping Name: Isopropanol
 Hazard Class: 3
 UN/NA: UN1219
 Packing Group: II
 Information reported for product size: 355LB

International (Water, I.M.O.):
 Proper Shipping Name: Isopropanol
 Hazard Class: 3
 UN/NA: UN1219
 Packing Group: II
 Information reported for product size: 355LB

SECTION 13 – TOXICOLOGICAL INFORMATION

Oral rat LD50: 5045 mg/kg; skin rabbit LD50: 12.8 gm/kg; inhalation rat LD50: 16,000 ppm/8-hour; investigated as a tumorigen, mutagen, reproductive effector.

Cancer Lists:

Ingredient	NTP Carcinogen		IARC Category
	Known	Anticipated	
Isopropyl Alcohol (67-63-0)	No	No	3
Water (7732-18-5)	No	No	None

SECTION 14 – ECOLOGICAL INFORMATION

Environmental Fate: When released into the soil, this material is expected to quickly evaporate. When released into the soil, this material may leach into ground water. When released into the soil, this material may biodegrade to a moderate extent. When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. When released into water, this material may biodegrade to a moderate extent. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.

Environmental Toxicity: The LC50/96-hour values for fish are over 100mg/L. This material is not expected to be toxic to aquatic life.

SECTION 15 – REGULATORY INFORMATION

Chemical Inventory Status – Part 1:

Isopropyl Alcohol (67-63-0); TSCA:Yes, EC:Yes, Japan:Yes, Australia:Yes
 Water (7732-18-5); TSCA:Yes, EC:Yes, Japan:Yes, Australia:Yes

Chemical Inventory Status – Part 2:

Canada:
 Isopropyl Alcohol (67-63-0); Korea:Yes, DSL:Yes, NDSL:No, Phil.:Yes
 Water (7732-18-5); Korea:Yes, DSL:Yes, NDSL:No, Phil.:Yes

Federal, State and International Regulations – Part 1:

SARA 302:

Isopropyl Alcohol (67-63-0); RQ:No, TPQ:No
 Water (7732-18-5); RQ:No, TPQ:No

SARA 313:

Isopropyl Alcohol (67-63-0); List:Yes, Chemical Catg.:No
 Water (7732-18-5); List:No, Chemical Catg.:No

Federal, State and International Regulations – Part 2:

Isopropyl Alcohol (67-63-0); CERCLA:No
 Water (7732-18-5); CERCLA:No

RCRA:

Isopropyl Alcohol (67-63-0); 261.33:No
 Water (7732-18-5); 261.33:No

TSCA:

Isopropyl Alcohol (67-63-0); 8 (d):No
 Water (7732-18-5); 8 (d):No



Chemical Weapons Convention: No

TSCA 12 (b): No

CDTA: No

SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No Reactivity: No
(Mixture/Liquid)

Australian Hazchem Code: 2[S]2

Poison Schedule: None allocated.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION: June 01, 2009

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MATERIAL SAFETY DATA SHEET

Based on U.S. Department of Labor
Occupational Safety and Health
Administration
Form OMB NO. 1218-0072

TELEPHONE NUMBER OF INFORMATION: 1-800-606-6246
EMERGENCY TELEPHONE NUMBER: 1-760-929-9911
DATE PREPARED: June 1, 2009

SECTION 1 - MATERIAL IDENTIFICATION

CHEMICAL NAME: Ethanol Solution, Ethyl Alcohol
TRADE NAME: Solution PW5

SECTION 2 - COMPOSITION/IDENTITY INFORMATION

Hazardous Material: Ethanol
CAS#: 64-17-5
MF: CH₃CH₂OH

SYNONYMS: Ethyl Alcohol Absolute; Dehydrated Ethanol; Anhydrous Ethanol, Methylated Spirits

SECTION 3 – HAZARD INFORMATION

Carcinogen Status: Not classifiable as a human carcinogen

Routes of Exposure:

Swallowing: May cause dizziness, faintness, drowsiness, decreased awareness or responsiveness, nausea, vomiting, staggering gait, lack of coordination, and coma

Skin Absorption: No harmful affects with normal skin.

Inhalation: High vapor concentration may cause burning sensation in nose and throat and stinging and watering in the eyes. At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea and vomiting may also occur.

Skin Contact: No evidence of harmful effects from available information.

Eye Contact: May cause irritation including stinging, tearing and redness.

Effects of Repeated Overexposure: Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis.

Other Health Hazards: Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders and small size head.

Medical Conditions Aggravated by Overexposure: Repeated exposure to ethanol may aggravate liver injury produced from other causes.

SECTION 4 – FIRST AID MEASURES

Obtain medical attention for all cases of over-exposure.

Swallowing: If patient is fully conscious, give two glasses of water. Induce vomiting. Obtain medical attention.

Skin: Wash skin with soap and water for at least 15 minutes.

Inhalation: Remove to fresh air; Give artificial respiration if not breathing; If breathing is difficult oxygen may be given by qualified personnel; Obtain medical assistance if discomfort persists.

Eye Contact: Flush eyes with water for at least 15 minutes.

Note to Physician: Symptoms vary with alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.5-1.5%.

Approximately 25% of individuals show signs of intoxication at these levels. Above 0.15% the person is definitely under the influence of ethanol; 50-95% of individuals are clinically intoxicated at these levels. Severe poisoning occurs when the blood ethanol level is 0.3-0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

Fire/Explosive Properties

Flash Point: 58F (14°C) Tag Closed Cup
70F (21°C) Tag Open Cup

Flammable Limits in Air: 3.3-19.0% (by volume)

Flammability Classification: 3 (NFPA)

1993 Emergency Response Guidebook: Guide 26

1996 North American Emergency Response Guidebook: Guide 127



Extinguishing Media: Apply alcohol-type or all-purpose foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

Special Fire Fighting Procedures: Use water spray to cool fire-exposed containers and structures; Use water spray to disperse vapors – re-ignition is possible; Use self-contained breathing apparatus and protective clothing.

Unusual Fire and Explosion Hazards:

- vapors may travel to source of ignition and flash back.
- vapors may settle in low or confined spaces.
- may produce a floating fire hazard.
- static ignition hazard can result from handling and use.

SECTION 6 – STABILITY AND REACTIVITY DATA

Stability: Stable

Incompatibilities: Strong oxidizing agents; strong inorganic acids

Hazardous Combustion or Decomposition Products: Carbon monoxide, carbon dioxide

Hazardous Polymerization: Will not occur.

SECTION 7 – PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT @ 760 mm Hg:	78.3° C (172.9° F)
VAPOR PRESSURE (mm Hg):	@20°C: 44.6 mm Hg
VAPOR DENSITY (AIR = 1):	1.6
SOLUBILITY IN WATER:	100% @ 20°C
APPEARANCE AND ODOR:	Clear and colorless liquid, characteristic
FREEZING POINT:	-114.1° C ((-173.4F)
SPECIFIC GRAVITY:	0.7906 @ 20/20°C
DENSITY @ 15.56C	6.61 lbs/gal
EVAPORATION RATE:	3.3 (butyl acetate = 1
PERCENT VOLATILES:	100%

SECTION 8 – ACCIDENTAL RELEASE MEASURES

Small spills can be flushed with large amounts of water. Large spills: Eliminate all ignition sources; ground all equipment; do not walk through spill; stop spill if possible; prevent entry into sewers, confined spaces, etc.; use a vapor suppressing foam to reduce vapors; absorb spill with non-combustible matter and transfer to containers; use non-sparking tools to collect absorbed material.

SECTION 9 – HANDLING AND STORAGE

- Flammable material – keep away from heat, sparks, and flame; sudden releases of hot organic vapors or mists from process equipment operating at elevated temperature may result in ignitions without the presence of obvious ignition sources.
- Avoid contact with eyes.
- Keep container closed.
- Use with adequate ventilation.
- Ground container when transferring product.
- Vapors may collect in containers; treat empty containers as hazardous.
- Wash thoroughly after handling.
- Vapors may settle in low or confined areas

SECTION 10 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Special, local ventilation is needed where vapors escape to the workplace air.

Respiratory Protection: Use self-contained breathing apparatus in high vapor concentration.

Personal Protective Equipment: Gloves, lab coat or uniform, safety glasses, eyewash, safety shower.

SECTION 11 – DISPOSAL CONSIDERATIONS

Vapors may collect in empty containers. Treat empty containers as hazardous. Dispose of spill-clean up and other wastes in accordance with Federal, State, and local regulations.



SECTION 12 – TRANSPORT INFORMATION

Proper Shipping Name: Ethyl Alcohol
Hazard Class: 3
Un Number: 1170
IMO Information: Ethanol or ethanol solutions
Label of Class: 3
Packing group II
Intermediate flashpoint group

SECTION 13 – TOXICOLOGICAL INFORMATION

See Regulatory Information

SECTION 14 – ECOLOGICAL INFORMATION

See Regulatory Information

SECTION 15 – REGULATORY INFORMATION

Federal EPA

Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA): No Chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on threshold planning quantities and release reporting based on reportable quantities in 40 CFR 355 (used for SARA 302, 304, 311, 312). Based upon available information, this material is classified as the following health and/or physical hazard according to section 311 & 312.

Immediate (Acute) Health Hazard.

Delayed (Chronic) Health Hazard.

Fire Hazard.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313): This material does not contain any chemical components with known CAS numbers that exceed the reporting limits.

Toxic Substances Control Act (TSCA) Status. All components of this product are listed or are exempt from listing on the TSCA inventory.

State Right to Know: No components of this product are listed on the California Prop 65 lists.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION: June 01, 2009

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SECTION 8 – ACCIDENTAL RELEASE MEASURES

Precautionary Measures: Wear self-contained breathing apparatus, chemical safety goggles, rubber boots, and heavy rubber gloves.

Clean-up Procedures: Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pick-up is complete.

SECTION 9 – HANDLING AND STORAGE

Storage: Store at room temperature.

SECTION 10 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical safety goggles. Rubber gloves. NIOSH / MSHA-Approved respirator. Safety shower and eye bath. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing.

SECTION 11 – DISPOSAL CONSIDERATIONS

All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

SECTION 12 – TRANSPORT INFORMATION

N/A

SECTION 13 – TOXICOLOGICAL INFORMATION

TOXICITY DATA: N/A

ACUTE EFFECTS INHALATION: May be harmful by inhalation.

EYE CONTACT: May cause eye irritation.

SKIN CONTACT: May cause skin irritation.

INGESTION: May be harmful if swallowed.

PROLONGED EXPOSURE: N/A

CHRONIC EFFECTS: N/A

RTECS number: N/A

ADDITIONAL INFORMATION: The product should be handled with the normal caution accorded chemicals. Additional harmful properties cannot be ruled out.

SECTION 14 – ECOLOGICAL INFORMATION

N/A

SECTION 15 – REGULATORY INFORMATION

N/A

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION: June 1, 2009

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