

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: PACE Technologies
3601 E. 34th St.
Tucson, AZ 85713

INFORMATION PHONE: 520-882-6598

EMERGENCY PHONE: CHEMTREC 800-424-9300 (US) Day or night
International call collect CHEMTREC 202-483-7616

TRADE NAME: SIAMAT 2 Colloidal Silica

CHEMICAL FAMILY: Abrasive

HMS RATING: HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 0

HAZARD RATING:

LEAST: 0 SLIGHT: 1 MODERATE: 2 HIGH: 3 EXTREME: 4

SECTION 2. CHEMICAL COMPOSITION**HAZARD INGREDIENTS**

CHEMICAL	CAS NUMBER	% PRESENT	TLV OR PEL
PRODUCT COMPOSITION PROPRIETARY			
Amorphous Silica	7631-86-9	40-60%	**
*Ethylene glycol	107-21-1	5-10%	***
Water	7732-16-5	30-55	

*Subject to SARA, section 313, annual toxic chemical release reporting.

**Exposure limits:

OSHA PEL: 80 mg/m³ total dust 8 hrs. TWA

ACGIH: 10 mg/m³ total dust 8 hrs. TWA

***Exposure limits:

50 ppm (125 mg/m³) OSHA ceiling

50 ppm (125 mg/m³) ACGIH ceiling (vapor and mist)

SECTION 3. Hazards Identification

Emergency Overview

WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

Health Rating: 2 - Moderate

Flammability Rating: 1 - Slight

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:

Vapor inhalation is generally not a problem unless heated or misted. Exposure to vapors over an extended time period has caused throat irritation and headache. May cause nausea, vomiting, dizziness and drowsiness. Pulmonary edema and central nervous system depression may also develop. When heated or misted, has produced rapid, involuntary eye movement and coma.

Ingestion:

Initial symptoms in massive dosage parallel alcohol intoxication, progressing to CNS depression, vomiting, headache, rapid respiratory and heart rate, lowered blood pressure, stupor, collapse, and unconsciousness with convulsions. Death from respiratory arrest or cardiovascular collapse may follow. Lethal dose in humans: 100 ml (3-4 ounces).

Skin Contact:

Minor skin irritation and penetration may occur.

Eye Contact:

Splashes may cause irritation, pain, eye damage.

Chronic Exposure:

Repeated small exposures by any route can cause severe kidney problems. Brain damage may also occur. Skin allergy can develop. May damage the developing fetus.

Aggravation of Pre-existing Conditions:

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

Ingestion:

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

Skin Contact:

Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

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:

Give sodium bicarbonate intravenously to treat acidosis. Urinalysis may show low specific gravity, proteinuria, pyuria, cylindruria, hematuria, calcium oxalate, and hippuric acid crystals. Ethanol can be used in antidotal treatment but monitor blood glucose when administering ethanol because it can cause hypoglycemia. Consider infusion of a diuretic such as mannitol to help prevent or control brain edema and hemodialysis to remove ethylene glycol from circulation.

SECTION 5. Fire Fighting Measures**Fire:**

Flash point: 111C (232F) CC Autoignition temperature: 398C (748F) Flammable limits in air % by volume: lel: 3.2; uel: 15.3 Slight to moderate fire hazard when exposed to heat or flame.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Containers may explode when involved in a fire.

Fire Extinguishing Media:

Dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Toxic gases and vapors may be released if involved in a fire.

SECTION 6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. 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. 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! 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

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from acids and oxidizing materials. 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): 50 ppm Ceiling -ACGIH Threshold Limit Value (TLV): 50 ppm Ceiling (vapor)

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 half-face respirator with an organic vapor cartridge and dust/mist filter may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and 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 protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 9. Physical and Chemical Properties

BOILING POINT:	> 195°C (est)
MELTING POINT:	< 0°C
SPECIFIC GRAVITY (H₂O = 1)	1.1-1.2
% VOLATILES BY VOLUME	80-90%
APPEARANCE AND ODOR	Clear, colorless liquid, mild odor.
SOLUBILITY IN WATER (% BY VOLUME)	Soluble
EVAPORATION RATE (BUTYL ACETATE = 1)	<1
VAPOR PRESSURE @ 20 C	0.05 mmHg (ethylene glycol)
VAPOR DENSITY	2.14 (ethylene glycol)
pH (concentration, unless specified)	9-10.5 (5% in deionized water)

SECTION 10. Stability and Reactivity**Stability:**

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition. May produce acrid smoke and irritating fumes when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizing agents. Reacts violently with chlorosulfonic acid, oleum, sulfuric acid, perchloric acid. Causes ignition at room temperature with chromium trioxide, potassium permanganate and sodium peroxide; causes ignition at 212F(100C) with ammonium dichromate, silver chlorate, sodium chloride and uranyl nitrate.

Conditions to Avoid:

Heat, flames, ignition sources, water (absorbs readily) and incompatibles.

SECTION 11. Toxicological Information

Basis for Assessment	Information given is based on product testing.
Acute Oral Toxicity	Low toxicity: LD50 >2000 mg/kg , Rat There is a marked difference in acute oral toxicity between rodents and man, man being more susceptible than rodents. The estimated fatal dose for man is 100 millilitres (1/2 cup). This material has also been shown to be toxic and potentially lethal by ingestion to cats and dogs. Ingestion may cause drowsiness and dizziness.
Acute Dermal Toxicity	Low toxicity: LD50 >2000 mg/kg , Rabbit
Acute Inhalation Toxicity	Expected to be of low toxicity: LC50 >20 mg/l Rat
Skin Irritation	May cause moderate irritation to skin.
Eye Irritation	Moderately irritating to eyes.
Respiratory Irritation	Inhalation of vapors or mists may cause irritation to the respiratory system.
Sensitization	Not a skin sensitizer.
Repeated Dose Toxicity	Kidney: can cause kidney damage.
Mutagenicity	No evidence of mutagenic activity.
Carcinogenicity	Not carcinogenic in animal studies.

Material	Carcinogenicity Classification
Ethylene Glycol	ACGIH Group A4: Not classifiable as a human carcinogen.
Colloidal Silica	Not classifiable as a human carcinogen.

Reproductive and Developmental Toxicity	Causes foetotoxicity in animals; considered to be secondary to maternal toxicity.
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SECTION 12. Ecological Information

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is expected to readily biodegrade. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. When released into water, this material is not expected to evaporate significantly. 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 is expected to have a half-life between 1 and 10 days.

Environmental Toxicity:

The LC50/96-hour values for fish are over 100 mg/l.

SECTION 13. 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 14. Transport Information

Not regulated.

SECTION 15. Regulatory Information

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status

Notification Status	AICS	Listed.
DSL		Listed.
INV (CN)		Listed.
ENCS (JP)		Listed. (2)-230
TSCA		Listed
EINECS		Listed 203-473-3
KECI (KR)		Listed KE-13169
PICCS (PH)		Listed

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

EG industrial grade (107-21-1)	Reportable quantity: 5,000 lbs
Ethylene Glycol (107-21-1)	Reportable quantity: 5,000 lbs

SARA Hazard Categories (311/312)

Immediate (Acute) Health Hazard.

SARA Toxic Release Inventory (TRI) (313)

Ethylene Glycol (107-21-1)	5-10%
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State Regulatory Status

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

New Jersey Right-To-Know Chemical List

Ethylene Glycol (107-21-1)	5-10%	Listed.
Collodial Silica (7631-86-9)	90-95%	

Pennsylvania Right-To-Know Chemical List Environmental hazard.

Ethylene Glycol (107-21-1) 5-10%
Diethylene Glycol (111-46-6) 0.5%
Collodial Silica (7631-86-9) 90-95%

Listed.
Listed.

SECTION 16. OTHER INFORMATION

PACE Technologies, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. PACE TECHNOLOGIES, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, PACE TECHNOLOGIES, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

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