



MTI Corporation

The Single Source of Single Crystal Substrates

2700 Rydin Road, Unit D, Richmond, CA 94804

TEL: 510-525-3070

FAX: 510-525-4705

Email: mti@mticrystal.com

Web site: www.mticrystal.com or www.mtixtl.com

MATERIAL SAFETY DATA SHEET: MTI-50-CSO

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: MTI-50-CSO, Colloidal Silica Slurry
CHEMICAL FAMILY: Water solution of colloidal silica acid
CHEMICAL NAME: Amorphous silica in water
FORMULA: SiO₂ in H₂O

SECTION 2: HAZARDOUS INGREDIENTS

INGREDIENT NAME: Silicon dioxide (amorphous)
/CAS NUMBER: 7631-86-9

EXPOSURE LIMITS

CONCENTRATION

OSHA:	6.000 mg/m ³ TWA	Approx. 40 %
ACGIH:	10.000 mg/m ³ TWA	

SECTION 1: PHYSICAL PROPERTIES

PHYSICAL FORM Liquid
COLOR..... White
ODOR..... Odorless
pH..... Approx. 10.0 @ 68°F (20°C)
BOILING POINT Approx. 212°F (100°C) @ 1013 mbar
MELTING/FREEZING POINT.... Approx. 32°F (0°C)
VISCOSITY (Dynamic): less than 15 mPas @ 68 F (20°C) SOLUBILITY IN
WATER Miscible
SPECIFIC GRAVITY Approx. 1.29 @ 68°F (20° C) BULK
DENSITY..... Not Established
VAPOR PRESSURE Approx. 20 mbar @ 68°F (20°C)



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SECTION 4: FIRE AND EXPLOSION DATA

FLASH POINT:..... Not Applicable.
AUTO-IGNITION TEMPERATURE: Not Applicable.
EXTINGUISHING MEDIA:..... Material is not combustible. Use
..... extinguishing media suitable for other
..... combustible materials in the area.
SPECIAL FIRE FIGHTING PROCEDURES: None.

SECTION 5: HUMAN HEALTH DATA

ROUTE(S) OF ENTRY Eye Contact; Skin Contact; Inhalation.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS OF EXPOSURE: Based on Animal Toxicity Data (See Section XII), we would expect this product to be non-irritating to the eyes and skin, and to be essentially non-toxic by ingestion. The dried mixture is dusty and mechanical irritation (ie. abrasion) to the eyes may occur due to exposure to fines. Eyes may become red and scratchy and may tear. Inhalation of the dusty dried mixture may cause respiratory irritation, sneezing, coughing and runny nose.

CHRONIC EFFECTS OF EXPOSURE: No applicable information was found concerning any adverse chronic health effects from overexposure to this product. Inhalation of the dried dusty mixture (primarily amorphous silica) may produce x-ray changes in the lungs, without disability.

CARCINOGENICITY: The components of this product are not listed by NTP, IARC or regulated as a carcinogen by OSHA.

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE: Persons with preexisting eye or skin conditions or impaired pulmonary function may be more susceptible to the effects of overexposure to this product.

EXPOSURE LIMITS: Not established for this product as a whole, refer to Section II for exposure limits of hazardous constituents.



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SECTION 6: EMERGENCY & FIRST AID PROCEDURES

FIRST AID FOR EYES: In case of contact, flush eyes with plenty of water for at least 15 minutes. Call a physician if irritation occurs.

FIRST AID FOR SKIN: In case of contact, flush skin with water. Wash clothing before reuse.

FIRST AID FOR INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

FIRST AID FOR INGESTION: If swallowed, call a physician.

SECTION 7: EMPLOYEE PROTECTION RECOMMENDATIONS

EYE PROTECTION REQUIREMENTS: Chemical safety goggles are recommended. **SKIN**

PROTECTION REQUIREMENTS: Chemically resistant gloves and clothing is recommended to minimize skin contact. Employees should wash their hands and face before eating, drinking or using tobacco products.

RESPIRATOR REQUIREMENTS: Work ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved dust respirator should be worn.

VENTILATION REQUIREMENTS: Use local ventilation if dusting or misting is a problem, to maintain air levels below the recommended exposure limit. **ADDITIONAL PROTECTIVE MEASURES:** Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product.



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SECTION 8: REACTIVITY DATA

STABILITY:	Under normal conditions of use and storage, the product is stable. Gelation occurs by addition of electrolytes or acids.
HAZARDOUS POLYMERIZATION:	Will not occur.
INCOMPATIBILITIES:	Electrolytes and acids.
INSTABILITY CONDITION:	pH 2 to 8, electrolytes.
DECOMPOSITION TEMPERATURE:	Not established.
DECOMPOSITION PRODUCTS:	Thermal decomposition produces oxides of silicon and other potentially toxic fumes.

SECTION 9: SPILL & LEAK PROCEDURES

SPILL OR LEAK PROCEDURES: Utilize recommended protective clothing and equipment. Take spill up with appropriate absorbent and sweep up and place in containers. Spill area can be washed with water. Collect wash water for approved disposal. Keep from entering water or ground water.

WASTE DISPOSAL METHOD: Waste disposal should be in accordance with existing federal, state and local environmental regulations.

SECTION 10: SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE (MIN/MAX):	41°F (5 C)/95° F (35°C)
SHELF LIFE:	Eighteen (18) months if stored properly.
SPECIAL SENSITIVITY:	Temperatures below 41°F and above 95°F

HANDLING/STORAGE PRECAUTIONS: Avoid breathing mists. Avoid getting in eyes or on skin. Wash thoroughly after handling. Store in a dry place away from excessive heat, in original or similar waterproof containers. Do not allow product to freeze. Reseal containers immediately after use. Store away from food and beverages.



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SECTION 11: SHIPPING INFORMATION

TECHNICAL SHIPPING NAME: Aqueous Solution of Colloidal Silica Acid FREIGHT

CLASS PACKAGE: Chemicals, NOI (NMFC 60,000) PRODUCT LABEL: MTI-50-CSO

DOT (HM-181) (DOMESTIC SURFACE)

PROPER SHIPPING NAME: None
HAZARD CLASS OR DIVISION: Non-Regulated
IMO / IMDG CODE (OCEAN)

PROPER SHIPPING NAME: None
HAZARD CLASS DIVISION NUMBER: Non-Regulated
ICAO / IATA (AIR)

PROPER SHIPPING NAME: None
HAZARD CLASS DIVISION NUMBER: Non-Regulated

SECTION 12: ANIMAL TOXICITY DATA

ACUTE TOXICITY

ORAL LD50: Greater than 15,000 mg/kg (Rat). (1) EYE

EFFECTS: Non-irritating to rabbit eyes. (1)

SKIN EFFECTS: Non-irritating to rabbit skin (24 hrs.). (1)

AQUATIC TOXICITY: Zebra barbel (Brachydanio rerio) LCo: 5000 mg/l. (1);

Acute Bacterial Toxicity: Activated sludge microorganism EC50: Greater than 10,000 mg/l. (1)

1 Toxicological test performed on analogous products at the Institute of Toxicology of Bayer AG.



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SECTION 13: FEDERAL REGULATORY INFORMATION

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS..... On TSCA Inventory

CERCLA REPORTABLE QUANTITY..... None.

SARA TITLE III:

SECTION 302 EXTREMELY

HAZARDOUS SUBSTANCES..... None. SECTION 311/312

HAZARD CATEGORIES Non-hazardous under Section- 311/312

SECTION 313

TOXIC CHEMICALS..... None.

RCRA STATUS If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)



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SECTION 14: OTHER REGULATORY INFORMATION

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

COMPONENT NAME

/CAS NUMBER	CONCENTRATION	STATE CODE
Silicon dioxide (amorphous)	7631-86-9	Approx. 40 %
Water	7732-18-5	Approx. 60 %

MA = Massachusetts Hazardous Substance List

NJ1 = New Jersey Hazardous Substance List

NJ4 = New Jersey Other - included in 5 predominant ingredients > 1%

PA1 = Pennsylvania Hazardous Substance List

PA3 = Pennsylvania Non-hazardous present at 3% or greater.

CN1 = Canada WHMIS Ingredient Disclosure List over 1%.

CALIFORNIA PROPOSITION 65

To the best of our knowledge, this product contains no levels of listed substances, which the state of California has found to cause cancer, birth defects or other reproductive effects.

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