

# SAFETY DATA SHEET



## SODIUM METASILICATE ANHYDROUS

MSDS No.: M5420

Rev. Date: 2010-April-01

Rev. Num. 05

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Company Identification:** Occidental Chemical Corporation  
5005 LBJ Freeway  
P.O. Box 809050  
Dallas, TX  
75380-9050

**24 Hour Emergency Telephone Number:** 1-800-733-3665 or 1-972-404-3228 (U.S.); 32.3.575.55.55 (Europe); 1800-033-111 (Australia)

**To Request an MSDS:** MSDS@oxy.com or 1-972-404-3245

**Customer Service:** 1-800-752-5151 or 1-972-404-3700

**Trade Name:** Special Grade S-25; Sodium Metasilicate Anhydrous Fines

**Synonyms:** Anhydrous Metasilicate, Sodium Metasilicate Anhydrous

**Product Use:** Cleaner, detergents / soaps

### 2. HAZARDS IDENTIFICATION

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#### EMERGENCY OVERVIEW:

**Color:** White  
**Physical State:** Solid  
**Appearance:** Granular  
**Odor:** Odorless  
**Signal Word:** DANGER

**MAJOR HEALTH HAZARDS:** CORROSIVE TO RESPIRATORY TRACT, EYES, SKIN AND DIGESTIVE TRACT. MAY CAUSE PERMANENT EYE DAMAGE. HARMFUL IF SWALLOWED.

**PHYSICAL HAZARDS:** May be corrosive to metals.

**PRECAUTIONARY STATEMENTS:** Keep only in original container. Wear protective gloves, protective clothing, eye, and face protection. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

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## 2. HAZARDS IDENTIFICATION

### POTENTIAL HEALTH EFFECTS:

**Inhalation:** Inhalation of dusts may cause irritation of the upper respiratory tract with sore throat, coughing and shortness of breath. Upon contact with moist mucous membranes, sodium metasilicate is highly alkaline and may cause corrosive damage. May cause severe irritation of the respiratory tract with coughing, choking, pain and possibly burns of the mucous membranes. In some cases, pulmonary edema and/or pneumonia may develop, either immediately or more often within 72 hours. The symptoms may include tightness in the chest, dyspnea, frothy sputum, cyanosis, and dizziness. Physical findings may include moist rales, low blood pressure and high pulse pressure.

**Skin contact:** Direct contact with wet material or by moist skin may cause severe irritation, pain, and possibly burns.

**Eye contact:** Dust or mist may cause severe irritation, pain and corneal burns (possibly leading to blindness). The full extent of the injury may not be immediately apparent.

**Ingestion:** May cause immediate pain and severe burns of the esophagus and gastrointestinal tract with vomiting, nausea, and diarrhea. Edema of the epiglottis and shock may occur.

See Section 11: TOXICOLOGICAL INFORMATION

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Percentage	CAS Number
Sodium metasilicate	95 - 99.5	6834-92-0
Water	1	7732-18-5

## 4. FIRST AID MEASURES

**INHALATION:** If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary Resuscitation and/or Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

**SKIN CONTACT:** Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. GET MEDICAL ATTENTION IMMEDIATELY.

**EYE CONTACT:** Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

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## 4. FIRST AID MEASURES

**INGESTION:** Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. Give large amounts of water. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. GET MEDICAL ATTENTION IMMEDIATELY.

**Notes to Physician:** The absence of visible signs or symptoms of burns does NOT reliably exclude the presence of actual tissue damage.

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## 5. FIRE-FIGHTING MEASURES

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**Fire Hazard:** Negligible fire hazard.

**Fire Fighting:** Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**Sensitivity to Mechanical Impact:** Not sensitive.

**Sensitivity to Static Discharge:** Not sensitive.

**Flash point:** Not flammable

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## 6. ACCIDENTAL RELEASE MEASURES

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**Occupational Release:**

Shovel dry material into suitable container. Wear appropriate personal protective equipment recommended. Flush spill area with water, if appropriate. Liquid material may be removed with a vacuum truck. Wet material is slippery under foot. Keep out of water supplies and sewers. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies.

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## 7. HANDLING AND STORAGE

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**Storage Conditions:** Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated. Keep separated from incompatible substances (see Section 10).

**Handling Procedures:** Avoid creation of dust. Avoid breathing dust. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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**Regulatory Exposure limit(s):** None

**Recommended Exposure Limit:**

3 mg/m<sup>3</sup> ceiling (internal Occupation Exposure Limit based on data from analogous chemicals).

**ENGINEERING CONTROLS:** Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT:**

**Eye Protection:** Wear safety glasses with side-shields. If eye contact is likely, wear chemical resistant safety goggles. When wet mixing, wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin and Body Protection:** Wear protective clothing to minimize skin contact. When potential for contact with wet material exists, wear Tychem® or similar chemical protective suit. When potential for contact with dry material exists, wear disposable coveralls suitable for dust exposure, such as Tyvek®.

**Hand Protection:** Wear appropriate chemical resistant gloves.

**Protective Material Types:** Butyl rubber, Natural rubber, Neoprene, Nitrile, Tychem®, Tyvek®

**Respiratory Protection:** A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Physical State:</b>	Solid
<b>Appearance:</b>	Granular
<b>Color:</b>	White
<b>Odor:</b>	Odorless
<b>Molecular Formula:</b>	Na <sub>2</sub> SiO <sub>3</sub>
<b>Boiling Point/Range:</b>	Not applicable
<b>Melting Point/Range:</b>	1990 F (1088 C)
<b>Vapor Pressure:</b>	Not applicable
<b>Specific Gravity (water=1):</b>	Not applicable
<b>Bulk Density:</b>	54 - 70 lbs/ft <sup>3</sup> (loose)
<b>Water Solubility:</b>	16%
<b>pH:</b>	12.7 (1% aqueous solution)
<b>Volatility:</b>	Not applicable
<b>Flash point:</b>	Not flammable

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## 10. STABILITY AND REACTIVITY

### Reactivity/ Stability:

Stable at normal temperatures and pressures. Prolonged contact with incompatible metals may produce flammable hydrogen gas.

### Conditions to Avoid:

Contact with acids will cause evolution of heat. Carbon monoxide gas may form upon contact with reducing sugars, food and beverage products in enclosed spaces.

### Incompatibilities/ Materials to Avoid:

Acids, Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys

### Hazardous Decomposition Products:

None reasonably foreseeable

### Hazardous Polymerization:

Will not occur

## 11. TOXICOLOGICAL INFORMATION

**IRRITATION DATA:** 250 mg/24 hour(s) skin-human severe; 250 mg/24 hour(s) skin-rabbit severe; 250 mg/24 hour(s) skin-guinea pig moderate

### TOXICITY DATA:

Component	LD50 Oral	LC50 Inhalation	LD50 Dermal
Sodium metasilicate	1280 mg/kg (Rat) 2400 mg/kg (Mouse)	-----	-----

### ACUTE TOXICITY:

Sodium metasilicate can produce caustic burns (i.e., colliquative necrosis) and induce hypocalcemia by binding calcium. Oral administration of sodium metasilicate to rats and mice (1153 and 770 mg/kg, respectively) produced ulceration or bleeding in the stomach, duodenum, and small intestine. Oral doses of a 20% solution (464, 1000, 2150, and 4640 mg/kg) produced gasping, dyspnea, acute depression, and/or nasal discharge at 1000 mg/kg; and the highest dose caused death. Injection of a neutralized 2.0% sodium metasilicate solution (~1200 mg/kg on day 1 and 800 mg/kg on days 2 and 3) decreased rat spleen weight by 60% and increased kidney weight. Microscopic lesions of the lymphatic tissues and cellular damage in the intestinal mucosa were also observed.

### CHRONIC TOXICITY:

No data were available regarding chronic exposure, reproductive or teratological effects, or carcinogenicity for sodium metasilicate.

**CARCINOGENICITY:** This product is not classified as a carcinogen by NTP, IARC or OSHA.

**MUTAGENIC DATA:** In assays using *Bacillus subtilis* strains without metabolic activation, sodium metasilicate (0.005-0.5 M) was not genotoxic.

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## 12. ECOLOGICAL INFORMATION

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### ECOTOXICITY DATA:

- **Aquatic Toxicity:**

This material has exhibited moderate toxicity to aquatic organisms.

### FATE AND TRANSPORT:

**BIODEGRADATION:** This material is inorganic and not subject to biodegradation.

**PERSISTENCE:** This material is believed to persist in the environment.

**BIOCONCENTRATION:** This material is not expected to bioconcentrate in organisms.

### ADDITIONAL ECOLOGICAL INFORMATION:

This material has exhibited slight toxicity to terrestrial organisms.

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## 13. DISPOSAL CONSIDERATIONS

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Reuse or recycle if possible. Dispose in accordance with all applicable regulations. May be subject to disposal regulations: U.S. EPA 40 CFR 261. Hazardous Waste Number(s): Reuse or recycle if possible. Dispose in accordance with all applicable regulations. May be subject to disposal regulations: U.S. EPA 40 CFR 261. Hazardous Waste Number(s): D002 (Corrosive).

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## 14. TRANSPORT INFORMATION

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### U.S.DOT 49 CFR 172.101:

**PROPER SHIPPING NAME:** Corrosive solid, basic, inorganic, n.o.s. (SODIUM METASILICATE)  
**UN NUMBER:** UN3262  
**HAZARD CLASS/ DIVISION:** 8  
**PACKING GROUP:** II  
**LABELING** 8  
**REQUIREMENTS:**

### CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

**SHIPPING NAME:** Corrosive liquid, basic, inorganic, n.o.s. (SODIUM METASILICATE)  
**UN NUMBER:** UN3262  
**CLASS OR DIVISION:** 8  
**PACKING/RISK GROUP:** II

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## 15. REGULATORY INFORMATION

### U.S. REGULATIONS

- **OSHA REGULATORY STATUS:**  
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) (US)
- **CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):**  
Not regulated.
- **EPCRA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):**  
Not regulated
- **EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.21):**  
Acute Health Hazard
- **EPCRA SECTION 313 (40 CFR 372.65):**  
Not regulated.
- **OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):**  
Not regulated

**FDA:** Sodium Silicates have Generally Recognized as Safe (GRAS) status under specific FDA regulations. Refer to 21 Code of Federal Regulations (CFR) 173, 175, 176, 177, 182, and 184, which is accessible on the FDA's website.

### NATIONAL INVENTORY STATUS

- **U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):** All components are listed or exempt
- **TSCA 12(b):** This product is not subject to export notification
- **Canadian Chemical Inventory:** All components are listed

### STATE REGULATIONS

#### California Proposition 65:

This product is not listed, but it may contain contaminants known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact OxyChem Customer Service.

Sodium metasilicate	
California Proposition 65 Cancer WARNING:	Not Listed
California Proposition 65 CRT List - Male reproductive toxin:	Not Listed
California Proposition 65 CRT List - Female reproductive toxin:	Not Listed
Massachusetts Right to Know Hazardous Substance List	Not Listed
New Jersey Right to Know Hazardous Substance List	Not Listed
New Jersey Special Health Hazards Substance List	Not Listed
New Jersey - Environmental Hazardous Substance List	Not Listed
Pennsylvania Right to Know Hazardous Substance List	Not Listed
Pennsylvania Right to Know Special Hazardous Substances	Not Listed
Pennsylvania Right to Know Environmental Hazard List	Not Listed
Rhode Island Right to Know Hazardous Substance List	Not Listed

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## CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations

Sodium metasilicate	
<b>WHMIS Classification:</b>	E

## 16. OTHER INFORMATION

**Prepared by:** OxyChem Corporate HESS - Health Risk Management

**HMIS: (SCALE 0-4)** (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

**Health:** 3      **Flammability:** 0      **Reactivity:** 0

**NFPA 704 - Hazard Identification Ratings (SCALE 0-4)**

**Health:** 3      **Flammability:** 0      **Reactivity:** 0

### IMPORTANT:

The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SUITABILITY, STABILITY OR OTHERWISE. The information included herein is not intended to be all-inclusive as to the appropriate manner and/or conditions of use, handling and/or storage. Factors pertaining to certain conditions of storage, handling, or use of this product may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended to, and nothing herein shall be construed as a recommendation to, infringe any existing patents or violate any laws, rules, regulations or ordinances of any governmental entity.

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.