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SAFETY DATA SHEET

(MSDS METS1207-Issued24.11.10:)

Sodium metasilicate pentahydrate

1. PRODUCT DESCRIPTION ↑

Chemical Name or Synonym: DISODIUM TRIOXOSILICATE, PENTAHYDRATE ;
CRYSTAMET

Molecular Formula: $\text{Na}_2\text{SiO}_3 \cdot n\text{H}_2\text{O}$ n=5

2. COMPOSITION/INFORMATION ON INGREDIENTS ↑

Component	CAS Reg Number	OSHA Hazard	Percentage
SODIUM METASILICATE	10213-79-3	Y	100

3. HAZARDS IDENTIFICATION ↑

A. EMERGENCY OVERVIEW:

Physical Appearance and Odor:

white granules solid, odorless.

Warning Statements:

DANGER! CAUSES SEVERE BURNS.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Corrosive. Causes burns, irritation.

Acute Skin:

Corrosive. Causes burns.

Acute Inhalation:

May cause upper respiratory tract irritation, dizziness, headache, shortness of breath, chest pain, muscle weakness, nausea, vomiting,

serious damage to lung tissue and respiratory tract.

Acute Ingestion:

Causes nausea, vomiting, abdominal pain, chest pain, burns to mouth and esophagus.

Chronic Effects:

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

4. FIRST AID MEASURES ↑

FIRST AID MEASURES FOR ACCIDENTAL:

Eye Exposure:

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If the physician is not immediately available, eye irrigation should be continued for an additional 15 minutes. If it is necessary to transport the patient to a physician and the eye needs to be bandaged, use a dry sterile cloth pad and cover both eyes.

Skin Exposure:

In case of contact, immediately wash with plenty of soap and water for at least 15 minutes. Seek medical attention. Remove contaminated clothing and shoes while washing. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned.

Inhalation:

Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek medical attention.

Ingestion:

If victim is conscious and alert, give 2-3 glasses of water to drink and do not induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that

overexposure to materials other than this product may have occurred. Treat symptomatically. No specific antidote available.

5. FIRE FIGHTING MEASURES ↑

FIRE HAZARD DATA:

Flash Point:

Not Applicable

Extinguishing Media:

Not combustible. Use extinguishing method suitable for surrounding fire.

Special Fire Fighting Procedures:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards:

Not combustible.

Hazardous Decomposition Materials (Under Fire Conditions):

none known

6. ACCIDENTAL RELEASE MEASURES ↑

Evacuation Procedures and Safety:

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill:

Follow procedure described below under Cleanup and Disposal of Spill.

Cleanup and Disposal of Spill:

Shovel up into an appropriate closed container (see Section 7: Handling and Storage). Avoid creation of dusty conditions. Decontaminate tools and equipment following cleanup.

Environmental and Regulatory Reporting:

If spilled on the ground, the affected area should be scraped clean and placed in a appropriate container for disposal. Prevent material from entering public sewer system or any waterways. Large spills should be handled according to a predetermined plan. For assistance in developing a plan contact the Technical Service Department using the Product Information phone number in Section 1.

7. HANDLING AND STORAGE ↑

Minimum/Maximum Storage Temperatures:

Not Available

Handling:

Do not get on skin or in eyes. Do not breathe dusts. Do not ingest.

Storage:

Store in tightly closed containers. Store in an area that is cool, dry, well-ventilated, away from foodstuffs or animal feed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION ↑

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

PARTICULATES NOT OTHERWISE REGULATED RESPIRABLE FRACTION			
	Notes	TWA	STEL
OSHA		5 mg/cu m	

PARTICULATES NOT OTHERWISE REGULATED TOTAL DUST			
	Notes	TWA	STEL
OSHA		15 mg/cu m	

Engineering Controls:

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the

appropriate regulatory standards and/or industrial recommendations.

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area. Face contact should be prevented through use of a face shield.

Skin Protection:

Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes of contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES ↑

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:

white granules solid.

Odor:

odorless.

pH:

12.4 at 1 wt/wt%.

Specific Gravity:

Not Available

Water Solubility:

soluble 61 wt/wt% at 30 C (86 F).

Melting Point Range:

72 C (162 F)

Boiling Point Range:

Not Available

Vapor Pressure:

Not Available

Vapor Density:

Not Available

Molecular Weight:

212.14

10. STABILITY AND REACTIVITY ↑

Chemical Stability:

This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:

moisture

Materials/Chemicals To Be Avoided:

aluminum

fluorine

zinc

acids

The Following Hazardous Decomposition Products Might Be Expected:**Decomposition Type: thermal**

none known

Hazardous Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization: not applicable

Avoid The Following To Inhibit Hazardous Polymerization:

not applicable

11. TOXICOLOGICAL INFORMATION ↑

Acute Eye Irritation:

Toxicological Information and Interpretation
eye - eye irritation, 0.1 ml, rabbit. Corrosive.

Acute Skin Irritation:

Toxicological Information and Interpretation
skin - skin irritation, rabbit.

Non-irritating. Dry skin. (At 4 hours.).
skin - skin irritation, rabbit. Corrosive. Moist skin. (At 4 hours.).

Acute Dermal Toxicity:

No test data found for product.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

No test data found for product.

Acute Oral Toxicity:

Toxicological Information and Interpretation
LD50 - lethal dose 50% of test species, 847 mg/kg, rat.

Chronic Toxicity:

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

12. ECOLOGICAL INFORMATION ↑

Ecotoxicological Information:

No data found for product.

Chemical Fate Information:

No data found for product.

13. DISPOSAL CONSIDERATIONS ↑

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

EPA Hazardous Waste - NO

14. TRANSPORTATION INFORMATION ↑

Transportation Status: IMPORTANT! Statements below provide additional

data on listed DOT classification. The listed Transportation Classification does not address regulatory variations due to changes in

package size, mode of shipment or other regulatory descriptors.

US Department of Transportation

Hazard Class..... 8
Shipping Name:
DISODIUM TRIOXOSILICATE
ID Number..... UN3253
Packing Group.... III
Labels..... CORROSIVE
Emergency Guide #.... 154

15. REGULATORY INFORMATION ↑

Inventory Status

Inventory	Status	
UNITED STATES (TSCA)	Y	
CANADA (DSL)	Y	
EUROPE (EINECS/ELINCS)	Y	
AUSTRALIA (AICS)	Y	
JAPAN (MITI)	Y	
SOUTH KOREA (KECL)	Y	
Y = All ingredients are on the inventory.		
E = All ingredients are on the inventory or exempt from listing.		
P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.		
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.		

FEDERAL REGULATIONS

Inventory Issues:

The hydrated components of this product are listed on the TSCA Inventory under their parent anhydrous compounds.

SARA Title III Hazard Classes:

- Fire Hazard - NO
- Reactive Hazard - NO
- Release of Pressure - NO
- Acute Health Hazard - YES

Chronic Health Hazard- NO

STATE REGULATIONS:

This product does not contain any components that are regulated under California Proposition 65.

16. OTHER INFORMATION ↑

National Fire Protection Association Hazard Ratings—NFPA(R):

3Health Hazard Rating--Serious

0Flammability Rating--Minimal

0Instability Rating--Minimal

National Paint & Coating Hazardous Materials Identification System—HMIS(R):

3Health Hazard Rating--Serious

0Flammability Rating--Minimal

0Reactivity Rating--Minimal

Reason for Revisions:

Change and/or addition made to Section 11.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

TLV - Threshold Limit Value

PEL - Permissible Exposure Limit

TWA - Time Weighted Average

STEL - Short Term Exposure Limit

NTP - National Toxicology Program

IARC - International Agency for Research on Cancer

ND - Not determined

RPI - Rhone-Poulenc Established Exposure Limits

Disclaimer:

The information herein is given in good faith but no warranty, expressed or implied