



# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Molecular Sieve Type 13X

**Chemical Name:** Sodium Aluminosilicate  
**Trade Name:** UOP™ Molecular Sieve

**Synonyms:** Zeolite, HP-13X, 13-HP

**Emergency Assistance**  
24 Hour Emergency Telephone Numbers

USA:	UOP	+1-847-391-2123
	Chemtec	+1-800-424-9300
In Canada:	Canutec	+1-613-996-6666
Outside USA:	Chemtec	+1-703-527-3887
In Europe from 08.00 until 17.00:		+39-2-57540.214

### In the USA

UOP  
Molecular Sieve Division  
25 E. Algonquin Road  
P.O. Box 5017  
Des Plaines, IL 60017-5017 USA  
Telephone: +1-847-391-3189  
FAX: +1-847-391-2953

### In Canada

UOP Canada Inc.  
Molecular Sieve Division  
120 Eglinton Ave., East  
Suite 304  
Toronto, Ontario M4P 1E2 Canada  
Telephone: +1-416-488-3562  
FAX: +1-416-488-4354

### In Europe

UOP M.S., S.p.A.  
Viale Milanofiori  
Strada 1 - Palazzo E1  
20090 Assago Mi  
Italy  
Telephone: +39-2-57540.214  
FAX: +39-2-57500.109/145

## 2. COMPOSITION

<u>Ingredient</u>	<u>CAS No.</u>	<u>Wt%</u>	<u>ACGIH TLV-TWA</u>	<u>OSHA PEL-TWA</u>
Silicon oxide (synthetic)	7631-86-9	< 60	10 mg/m <sup>3</sup> Inhalable 3 mg/m <sup>3</sup> Respirable	15 mg/m <sup>3</sup> Total dust 5 mg/m <sup>3</sup> Respirable fraction
Aluminum oxide (non-fibrous)	1344-28-1	< 40	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup> Total dust 5 mg/m <sup>3</sup> Respirable dust
Sodium oxide	1313-59-3	< 20	N/E	N/E
Magnesium oxide	1309-48-4	< 5	10 mg/m <sup>3</sup> Fume	15 mg/m <sup>3</sup> Fume, total particulate

N/E - None established.  
CAS - Chemical Abstracts Service  
ACGIH - American Conference of Governmental Industrial Hygienists  
TLV - Threshold Limit Value  
OSHA - Occupational Safety and Health Administration - USA  
TWA - Time Weighted Average  
PEL - Permissible Exposure Limit

## 3. HAZARD IDENTIFICATION

### EMERGENCY OVERVIEW

The product is odorless tan pellets, granules, beads, white powder or cake. In the fresh unused state, this product is not flammable. When first wetted, the product can heat up to the boiling point of water. Flooding will reduce the temperature.

## POTENTIAL HEALTH EFFECTS:

**Primary Routes of Exposure:** Contact with skin, eyes, and dust inhalation. Product ingestion is unlikely to occur if proper safety/hygiene procedures are followed.

**Skin Contact:** May cause skin irritation. This material becomes hot when it first comes into contact with moisture. The hot material could cause thermal burns.

**Eye Contact:** Dust and/or product may cause eye discomfort and/or irritation seen as tearing and reddening.

**Ingestion:** The product gets hot as it adsorbs water. Burns to moist body tissues can result if contact is prolonged.

**Inhalation:** This product produces heat as it adsorbs water. Burns to moist body tissue may result if contact is prolonged.

**Target Organ:** Prolonged or repeated exposure may cause lung injury.

### **Carcinogenicity Classification:**

International Agency for Research on Cancer (IARC):

Silicon oxide (synthetic) - Not classifiable as human carcinogen (Group 3).

U.S. National Toxicology Program (NTP):

Neither the product nor the component(s) are classified.

U.S. Occupational Safety and Health Administration (OSHA):

Neither the product nor the component(s) are classified or regulated.

## **4. FIRST AID MEASURES**

**Skin Contact:** Wash affected area with soap and water. If irritation develops, obtain medical attention.

**Eye Contact:** Flush with water for at least 15 minutes. If irritation occurs, obtain medical attention.

**Ingestion:** Drink at least 2 glasses of water. Never give anything by mouth if the affected person is losing consciousness, is unconscious, or is convulsing. Obtain medical attention.

**Inhalation:** Remove affected person to fresh air. If respiratory problems develop, obtain medical attention.

**Notes to Physician:** This product is a desiccant and generates heat as it adsorbs water. The used product can contain material of a hazardous nature. Identify that material and treat symptomatically.

## **5. FIRE FIGHTING MEASURES**

**Flash Point:** Unused material will not burn.

**Extinguishing Media:** Use media appropriate for surrounding fire.

**Fire and Explosion Hazards:** Used material may contain materials of a hazardous nature. The user of this product must identify the hazards of the retained material and inform the fire fighters of these hazards.

## 6. ACCIDENTAL RELEASE MEASURES

**Large Spill:** Confine entry into the affected area to those persons properly protected. Special attention should be given to eye, skin and respiratory protection because recovery of dry product is expected to generate dust. Sweep, shovel or vacuum spilled product into appropriate containers (do not use a vacuum if material has contacted a hydrocarbon material).

**Small Spill:** Sweep or vacuum spilled product into appropriate container (do not use a vacuum if material has contacted a hydrocarbon). Product should be disposed of in accordance with all applicable government regulations.

## 7. HANDLING AND STORAGE

Store in tightly closed, properly labeled containers. Avoid contact with eyes and inhalation of dust. Avoid repeated or prolonged contact with skin. Provide an electrical ground connection during loading and transfer operations to avoid static discharge in an explosive atmosphere and to prevent persons handling the product from receiving static shocks.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Respiratory Protection:** Where natural ventilation is inadequate, use mechanical ventilation, other engineering controls, or a toxic dust respirator (in USA - NIOSH/MSHA approved) to prevent inhalation of product dust.

**Skin Protection:** Use gloves to avoid prolonged or repeated skin contact.

**Eye Protection:** Safety glasses or goggles as necessary to prevent eye contact.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

These data do not represent technical or sales specifications.

**Appearance:** Tan pellets or white powder  
**Odor:** None  
**pH:** Not applicable  
**% Volatile:** Not applicable  
**Pour Point:** Not applicable  
**Viscosity:** Not applicable

**Specific Gravity:** 1.1 (piece), 2.1 (crystal)  
**Apparent Bulk Density:** Not available  
**Solubility in Water:** Not available  
**Boiling Point:** Not applicable  
**Freezing Point:** Not applicable  
**Vapor Pressure:** Not applicable  
**Vapor Density:** Not applicable

## 10. STABILITY

- Stability:** Stable.
- Conditions to Avoid:** The addition of moisture (water) without flooding can cause rise in temperature from heat of adsorption. Contact with skin might result in burns.
- Hazardous Decomposition Products:** Hydrocarbons and other materials that contact the product during normal use can be retained on the product. It is reasonable to expect that decomposition products will come from these retained materials of use. The product itself does not readily decompose unless subject to extreme temperature or chemical conditions. If such decomposition does occur, the products will include oxides shown in Section 2.
- Hazardous Polymerization:** Will not occur.
- Incompatible Materials:** Sudden contact with high concentrations of chemicals having high heats of adsorption such as olefins, HCl, etc.

## 11. TOXICOLOGICAL INFORMATION

- Acute Oral Toxicity:** The following is for a product with a similar composition. The LD<sub>50</sub> is greater than 5 g/kg (rat).
- Acute Dermal Toxicity:** A dermal LD<sub>50</sub> is not available for this product.
- Acute Inhalation Toxicity:** An inhalation LC<sub>50</sub> is not available for this product.
- Irritation:** The eye irritancy potential of the powdered form was assessed by instilling 10 mg or 60 mg into the inferior conjunctival sac of one eye of each of 6 rabbits. Eyes were then examined for signs of ocular and periocular inflammation and injury up to 7 days postinstillation. The material was found from the 60 mg results to be an ocular irritant by FHSA standards.
- Additional Toxicological Information:**  
A similar product has an extremely low order of toxicity by swallowing. The similar pellets were pulverized and suspended in semi-solid agar for ease of administration.
- When the Molecular Sieve was administered by stomach intubation to male rats, the animals survived single massive doses equivalent to 32.0 gram per kilogram of body weight with good weight gains. There were no significant micropathological findings on tissue taken fourteen days after dosing.

## 12. ECOLOGICAL INFORMATION

- Aquatic Toxicity:** None known.
- Waterfowl Toxicity:** None known.
- Biochemical Oxygen Demand:** None.
- Food Chain Concentration Potential:** None expected.

## 13. DISPOSAL INFORMATION

Discard any product (including any retained materials of use), disposable container or liner in an environmentally acceptable manner, in full compliance with all applicable government regulations. This product (in its fresh unused state) is not listed by generic name or trademark name in the U.S. EPA's Resource Conservation and Recovery Act (RCRA) Hazardous Waste Management Regulations and does not possess any of the four identifying characteristics of hazardous waste (ignitability, corrosivity, reactivity, or

toxicity).

## 14. TRANSPORTATION INFORMATION

U.S. Department of Transportation Shipping Name:  
Not regulated.

International Maritime Organization (IMO):  
Not regulated.

## 15. REGULATORY INFORMATION

### United States

**Toxic Substances Control Act (TSCA):**

All the ingredients of this mixture are registered in the TSCA Chemical Substance Inventory.

**Superfund Amendments and Reauthorization Act Title III, Section 313:**

The following component(s) of this product are subject to release reporting under 40 CFR 302 when a release exceeds the Reportable Quantity (RQ) and/or the component(s) are subject to the emergency planning provisions of 40 CFR 355 when there are amounts present which are equal to or greater than their Threshold Planning Quantity (TPQ):

--None--

**Superfund Amendments and Reauthorization Act Title III:**

The following component(s) of this product are subject to emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (used for SARA 302, 304, 311 and 312):

--None--

**State Community Right-to-Know Legislation:**

The following component(s) of this product are regulated under California's Proposition 65:

--None--

### European Union (EU)

**European Inventory of Existing Commercial Chemical Substances:**

All components of this preparation are included in EINECS/ELINCS.

Zeolites are also listed under EINECS No. 2152838.

Silicon oxide (synthetic) 2315454

Aluminum oxide (non-fibrous) 2156916

Sodium oxide 2152089

Magnesium oxide 2151719

**Council of European Communities Directive on Classification, Packaging and Labelling of Dangerous Substances/Preparation (67/548/EEC & 88/379/EEC):**

No Dangerous Goods Label Required.

### Canadian Hazardous Products Act

This product is not classified as a controlled product under regulations pursuant to the federal Hazardous Product Act (e.g. WHMIS).

## 16. OTHER INFORMATION

Summary of Changes: New area code.  
I.D./Form: M-4504  
Supersedes: January 1996

HMIS™ - Hazardous Materials Identification System

HMIS™ Ratings	
HEALTH	1
FLAMMABILITY	0
REACTIVITY	0

0-minimal hazard, 1-slight hazard, 2-moderate hazard, 3-serious hazard, 4-severe hazard.

For additional information concerning this product, contact the following:

**For health, safety & environmental information, please contact:**

UOP Product Stewardship Manager  
Health, Safety & Environmental Dept.  
25 E. Algonquin Road  
P.O. Box 5017  
Des Plaines, IL 60017-5017 USA  
Telephone: +1-847-391-3189  
FAX: +1-847-391-2953

**For technical or purchasing information, please contact:**

Adsorbent Sales  
UOP - Molecular Sieve Dept.  
13105 Northwest Freeway  
Suite 600  
Houston, TX 77040 USA  
Telephone: +1-713-744-2811  
FAX: +1-713-744-2802

### PRODUCT EMERGENCIES

If you have a product-related emergency, resulting in an incident such as a spill or release of product or human exposure and need assistance from UOP, please call the following number:

**UOP 24-Hour Emergency Telephone Number: +1-847-391-2123**

This data and recommendations presented in this data sheet concerning the use of our product and the materials contained therein are believed to be accurate and are based on information which is considered reliable as of the date hereof. However, the customer should determine the suitability of such materials for his purpose before adopting them on a commercial scale. Since the use of our products by others is beyond our control, no guarantee, expressed or implied, is made and no responsibility assumed for the use of this material or the results to be obtained therefrom. Information on this form is furnished for the purpose of compliance with Government Health and Safety Regulations and shall not be used for any other purposes. Moreover, the recommendations contained in this data sheet are not to be construed as a license to operate under, or a recommendation to infringe, any existing patents, nor should they be confused with state, municipal or insurance requirements, or with national safety codes.