

KJLC Product Code: **MST-13X-1-8****View Section :** **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16****SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION**

(N/A)

Product Name: **Molsiv Adsorbents 13X**
1/8

Manufacturer Name: UOP, LLC

Address: 25 E. Algonquin Road
Des Plaines, IL
60017-5017
USAEmergency Assistance – 24
hour Emergency Telephone

Numbers:

USA (UOP LLC):

+1-847-391-2123

USA (CHEMTREC):

+1-800-424-9300

Canada (CANUTEC):

+1-613-996-6666

Outside USA

(CHEMTREC):

+1-703-527-3887

UOP M.S. S.r.l.

Viale Milanofiori

Strada 1 – Palazzo E1

20090 Assago Mi, Italy

Tel: +39-02-892241

Fax: +39-02-57500145

General Use: Adsorbent

Business Phone: +1-847-391-3189

Business Fax: +1-847-391-2953

Revision Date: March 2004
Supersedes: February 2001
Revision Number: 3

HMIS TM – Hazardous Material Information System:

HMIS TM Ratings:

0 – Minimal hazard

1 – Slight hazard


2 – Moderate hazard

3 – Serious hazard

4 – Severe hazard

* may cause cancer

Product Codes: F8938402


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(N/A)

Ingredient Name	CAS#	Ingredient Percent
Silicon oxide (synthetic)	7631-86-9	< 65% by Weight
OSHA PEL TWA: ACGIH TLV TWA: UNITS:	15 mg/m3 (TD); 5 mg/m3 (R) None Established mg/m3	
Aluminum oxide (non-fibrous)	1344-28-1	< 35% by Weight
OSHA PEL TWA: ACGIH TLV TWA: UNITS:	15 mg/m3 (TD); 5 mg/m3 (R) 10 mg/m3 mg/m3	

Sodium oxide	1313-59-3	< 20% by Weight
OSHA PEL TWA: ACGIH TLV TWA: UNITS:	None Established None Established Not Applicable	
Magnesium oxide	1309-48-4	< 5% by Weight
OSHA PEL TWA: ACGIH TLV TWA: UNITS:	15 mg/m3 (Total Particulate) 10 mg/m3 (I) mg/m3	
Quartz	14808-60-7	< 2% by Weight
OSHA PEL TWA: ACGIH TLV TWA: UNITS:	TD: 30 mg/m3/(%SiO ₂ +2); RD: 10 mg/m3/(%SiO ₂ +2) 0.05 mg/m3 (R) mg/m3	

Note: The OSHA Permissible Exposure Limits (PEL) are determined from the percentage of quartz from airborne samples.

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SECTION 3: HAZARDS IDENTIFICATION (N/A)

Emergency Overview: Repeated or prolonged exposure may irritate eyes, skin and respiratory system. When first wetted, the product can heat up to the boiling point of water. Flood with water to cool material. Repeated and prolonged inhalation of crystalline silica in the form of quartz from occupational sources may cause cancer.

Physical State: Form: Pellets

Color: Tan

Applies to all ingredients:

Route of Exposure: Contact with skin and eyes. Exposure may also occur via inhalation or ingestion if product dust is generated.

Potential Health Effects:

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

Skin Contact: May cause skin irritation. The product gets hot as it first adsorbs water.

Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Repeated and prolonged inhalation of crystalline silica in the form of quartz from occupational sources may cause cancer.

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

Chronic Inhalation: Prolonged or repeated inhalation may cause lung injury/cancer.

Silicon oxide (synthetic) :

Carcinogenicity: International Agency for Research on Cancer (IARC):
Silicon oxide (synthetic) – Unclassifiable as to carcinogenicity in humans (Group 3).
Inhaled crystalline silica in the form of quartz from occupational sources is carcinogenic to humans (Group 1).

Aluminum oxide (non-fibrous) :


Carcinogenicity: American Conference of Governmental Industrial Hygienists (ACGIH):
Aluminum oxide – Not Classifiable as a Human Carcinogen (A4).

Quartz :

Carcinogenicity: U.S. National Toxicology Program (NTP):
Quartz – Known human carcinogen.

U.S. Occupational Safety and Health Administration (OSHA):
Quartz – Known Carcinogen.


American Conference of Governmental Industrial Hygienists (ACGIH):
Quartz – Suspected Human Carcinogen (A2)

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SECTION 4 : FIRST AID MEASURES


: (N/A)

Eye Contact:	Flush immediately with plenty of water for at least 15 minutes. If eye irritation persists, consult a physician.
Skin Contact:	Wash off with soap and plenty of water. If skin irritation persists, call a physician.
Inhalation:	Remove the victim into fresh air. If symptoms persist, call a physician.
Ingestion:	Drink at least 2 glasses of water. Obtain medical attention. Never give anything by mouth to an unconscious person.
Note to Physicians:	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.

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: (N/A)

Explosion:	Explosion limits: Not Applicable
Flash Point:	Not Applicable
Auto Ignition Temperature:	Not Applicable
Extinguishing Media:	Suitable: Non-combustible. Use extinguishing media for surrounding fire.
Unsuitable Media:	Not Applicable
Protective Equipment:	Special: In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.
Unusual Fire Hazards:	The product itself does not burn. The used product can retain material of a hazardous nature. Identify that material and inform the fire fighters.

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: (N/A)

Personal Precautions:	See Section 8.
Spill Cleanup Measures:	Sweep, shovel or vacuum spilled product into appropriate containers (do not use a vacuum if material has contacted a hydrocarbon material). Pick-up and arrange disposal without creating dust. Never use spilled product. Spilled product should be disposed of in accordance with all applicable government regulations.
Environmental Precautions:	No special environmental precautions required.

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: (N/A)

Handling:	Handle and open container with care. Avoid formation of dust particles. Avoid contact with skin and eyes. 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. A copy of UOP's booklet, "Precautions and Safe Practices for Handling Zeolite Molecular Sieve Adsorbents in Process Units", can be obtained from your UOP representative at no cost.
Storage:	Store in original container. Keep in a dry place.

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: (N/A)


Engineering Controls:	Engineering measures: Where natural ventilation is inadequate, especially in confined areas, use mechanical ventilation, other engineering controls or respiratory protection to prevent inhalation of product dust.
Personal Protective Equipment Routine Handling:	Handle in accordance with good industrial hygiene and safety practice.
Skin Protection Description:	Work uniform and gloves to prevent prolonged contact.
Hand Protection Description:	Protective gloves.
Eye/Face Protection:	Safety glasses or goggles.
Protective Clothing/Body Protection:	Work uniform and gloves to prevent prolonged contact.
Respiratory Protection:	In case of insufficient ventilation, wear suitable respiratory equipment. Air-purifying respirator with NIOSH classification N-100 filter or P-100 (or equivalent) if oil/liquid aerosols are present (42 CFR 84).

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SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

: (N/A)

Physical State/Appearance:	Form: Pellets
Color:	Tan
Odor:	None
pH:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Flash Point:	Not Applicable
Auto Ignition Temperature:	Not Applicable
Boiling Point:	Not Applicable
Melting Point:	Not Applicable
Solubility:	In Water: Not Determined Solubility: Not Determined
Specific Gravity:	Not Applicable
Density:	Bulk: Not Determined
Viscosity:	Relative: Not Applicable Not Applicable Explosion limits: Not Applicable
	Abbreviations: AS – Aqueous slurry N.D. – Not Determined N.A. – Not Applicable
	Info: These data do not represent technical or sales specifications.

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: (N/A)

Chemical Stability:	Stable.
Conditions to Avoid:	Sudden contact with high concentrations of chemicals having high heats of adsorption such as olefins, HCl, etc. When first wetted, the product can heat up to the boiling point of water. Flood with water to cool material.
Incompatibilities with Other Materials:	Materials to avoid: Sudden contact with high concentrations of chemicals having high heats of adsorption such as olefins, HCl, etc. When first wetted, the product can heat up to the boiling point of water. Flood with water to cool material.
Hazardous Decomposition Products:	No decomposition if used as directed. 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.

[To Top of page](#) **SECTION 11 : TOXICOLOGICAL INFORMATION**

: (N/A)

Applies to all ingredients:

Routes of Exposure:	Exposure may occur via inhalation, contact with skin and eyes.
Skin Effects:	Acute toxicity: LD/dermal/rabbit = > 2 000 mg/kg *
Ingestion Effects:	Acute toxicity: LD50/oral/rat = > 32 000 mg/kg *
Inhalation Effects:	Acute toxicity: LC50/inhalation/rat = No data available.
Chronic Effects:	Classification of Ingredients
Carcinogenicity:	EC: Not listed.
Mutagenicity:	EC: Not listed.
Reproductive Toxicity:	EC Toxic for Reproduction: Not listed.
Irritation:	Skin (rabbit): Not classified as a skin irritant in animal testing.* Eye (rabbit): Mild eye irritation. *
Other Toxicological Information:	Additional Product Information: *The toxicological data has been taken from products of similar composition.
	Additional component information: No data available.

Silicon oxide (synthetic) :

Carcinogenicity:	IARC Classification: Group 3 (Silicon oxide – synthetic)
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Aluminum oxide (non-fibrous) :

Carcinogenicity: (ACGIH): A4 (Aluminum oxide)

Quartz :Carcinogenicity: (ACGIH): A2 (Quartz)
IARC classification: Group 1 (Quartz)[To Top of page](#) **SECTION 12 : ECOLOGICAL INFORMATION**

: (N/A)


Bioaccumulation: No data available.
 Biodegradation: No data available.
 Effect of Material On Aquatic Life: Aquatic toxicity: No data available.
 Mobility: No data available.
 Further Information: No information available.

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: (N/A)

Waste Disposal: This product (in its fresh unused state) is not listed by generic name or trademark name in the U.S. EPA's RCRA regulations and does not possess any of the four identifying characteristics of hazardous waste (ignitability, corrosivity, reactivity or toxicity). Materials of a hazardous nature that contact the product during normal use may be retained on this product. The user of the product must identify the hazards associated with the retained material in order to assess the waste disposal options.

RCRA Hazard Class: Provisions relating to waste: EPA – Resource Conservation and Recovery Act (RCRA) Hazardous and Solid Waste Management Regulations.

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: (N/A)

Transportation Information: Proper shipping name: Not applicable.
UN-No.: Not applicable.
Packaging Group: Not applicable.

DOT Shipping Information: U.S. DOT:
Remarks: Not Applicable.
Marine Pollutant DOT: No

DOT Hazard Class: Not regulated.

IATA: Remarks: Not Applicable.
Instr. Passenger: Not Applicable.
Instr. Cargo: Not Applicable.

IATA Class: Not regulated.

RID/ADR: Remarks: Not Applicable.

RID/ADR Dangerous Goods Code: Not Applicable.

RID/ADR Class: Not regulated.


Reportable Quantity: U.S. DOT: Not Applicable.

Maritime Transportation CGVS/GGVE/IMDG: Remarks: Not Applicable.

CGVS/GGVE/IMDG Class: Not regulated.

EMS Number: Not applicable.

Maritime Pollutant: No

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: (N/A)

Applies to all ingredients:


TSCA 8(b): Inventory Status: All the ingredients of this mixture are registered on the TSCA Chemical Substance Inventory.

SARA: SARA Title III (Superfund Amendments and Reauthorization Act of 1986):

Section 302: The following component(s) of this product is/are subject to the emergency planning provisions of 40 CFR 355 when there are amounts equal to or greater than the Threshold Planning Quantity (TPQ):

Section 302 Extremely Hazardous Substances (TPQ): None

Section 304:	CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) Reportable Quantity: The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):
Section 304 CERCLA RQ:	None
Section 313 Toxic Release Form:	The following component(s) have been specified as Toxic Chemicals under SARA Section 313 and may be subject to the Toxic Release Inventory (TRI) reporting requirements under 40 CFR 372: None
State:	The following components are listed in U.S. State Regulations: State Reg Reference: California – Proposition 65: Silica, crystalline State Reg Reference: Massachusetts Right-To-Know: Amorphous silica Aluminum oxide Quartz State Reg Reference: New Jersey Right-To-Know: Silica, amorphous Aluminum oxide Magnesium oxide Silica, quartz State Reg Reference: Pennsylvania Right-To-Know: Silica Aluminum oxide Magnesium oxide Quartz
Canada WHMIS:	Canadian Hazardous Products Act: This product is classified as a material causing other toxic effects, carcinogenicity – Class D, Division 2, Subdivision A. Canadian Environmental Protection Act: All the ingredients of this mixture are notified to CEPA and on the DSL (Domestic Substances List).
European Community Chemical Inventory Status:	European Inventory of Existing Commercial Chemical Substances: All components of this product are included in EINECS/ELINCS. Council of European Communities Directive on Classification, Packaging and Labelling of Dangerous Substances/Preparation (67/548/EEC & 1999/45/EC, as amended): No Dangerous Goods Label Required.
Japan Chemical Inventory Status:	Japan – Existing and New Chemical Substances (ENCS): All the ingredients of this mixture appear on the ENCS.
Australia Chemical Inventory Status:	Australia – Inventory of Chemical Substances (AICS): All the ingredients of this mixture appear on the AICS.
International Chemical Inventory Lists:	China: All the ingredients of this mixture appear on the China Inventory. Korea – Existing and Evaluated Chemical Substances (ECL): All the ingredients of this mixture appear on the ECL. Philippines – Inventory of Chemicals and Chemical Substances (PICCS): All the ingredients of this mixture appear on the PICCS.
Note:	Other U.S. State Regulations may exist, check your local sources if available or contact the UOP Product Stewardship Manager (see Section 16).

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SECTION 16 : ADDITIONAL INFORMATION

(N/A)

HMIS:

Health Hazard:	1* – Slight hazard (* may cause cancer)
Fire Hazard:	0 – Minimal hazard
Reactivity:	1 – Slight hazard
MSDS Revision Date:	March 2004 Supersedes: February 2001 Revision Number: 3
	Summary of changes: Sections 3, 4, 8, 11, 15 (US)
MSDS Author:	Prepared by: UOP Health, Safety & Environmental Department

Disclaimer:

The 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, express 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.

Abbreviations:

N.A. – Not Applicable
N.E. – None Established
SC – Soluble Compounds
RD – Respirable Dust
TD – Total Dust
FuD – Fume and Dust
Fu – Fume
I – Inhalable
R – Respirable
IS – Insoluble

For additional information concerning this product, contact the following:

For health, safety and environmental information, please contact:

Product Stewardship Manager
UOP LLC
25 E. Algonquin Road
Des Plaines, IL 60017-5017
USA
Tel: +1-847-391-3189
Fax: +1-847-391-2953

Product Safety Steward Europe
UOP N.V.
Noorderlaan 147
B-2030 Antwerpen
Belgium
Tel: +32-3-5409-971
Fax: +32-3-5417-806

For technical or purchasing information, please contact:

Adsorbent Sales
UOP – Molsiv Dept.
13105 Northwest Freeway
Suite 600
Houston, TX 77040
USA
Tel: +1-713-744-2811
Fax: +1-713-744-2808

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 contact the following number:
24-Hour EMERGENCY NUMBER (UOP LLC): +1-847-391-2123

HMIS TM – Hazardous Material Information System:

HMIS TM Ratings:
0 – Minimal hazard
1 – Slight hazard
2 – Moderate hazard
3 – Serious hazard
4 – Severe hazard
* may cause cancer