

MATERIAL SAFETY DATA SHEET

M-4831
September 1985



An explanation of the terms used here-in may be found in OSHA 29 CFR 1910.1200,
available from OSHA regional or area offices
(Essentially similar to U.S. Department of Labor Form OSHA-20
and generally accepted in Canada for information purposes)
Do Not Duplicate This Form. Request an Original.



PRODUCT Molecular Sieve Type AW300

CHEMICAL NAME	Sodium Aluminosilicate	SYNONYMS	Zeolite
FORMULA	Na ₂ O, Al ₂ O ₃ , SiO ₂ , CaO, K ₂ O	CHEMICAL FAMILY	Molecular Sieve
		MOLECULAR WEIGHT	Not Applicable

TRADE NAME UNION CARBIDE® Molecular Sieve

A complex of elements and compounds composed of material shown below
NOTE: In the table below, the symbol "<" means "less than".

MATERIAL (CAS NO.)	Wt (%)	1984-1985 ACGIH TLV-TWA (OSHA-PEL)
Sodium Oxide (1313-59-3)	< 20	None currently established (None currently established)
Calcium Oxide (1305-78-8)	< 5	2 mg/m ³ (5 mg/m ³)
Silicon Oxide (7631-86-9)	< 70	10 mg/m ³ Total dust (20 mppcf) 5 mg/m ³ Respirable dust (None currently established)
Potassium Oxide (12136-45-7)	< 5	None currently established (None currently established)
Aluminum Oxide (1344-28-1)	< 20	Nuisance particulate (Nuisance dust) 10 mg/m ³ Total dust (15 mg/m ³ Total dust) 5 mg/m ³ Respirable dust (5 mg/m ³ Respirable fraction)

BOILING POINT, 760 mm. Hg	Not Applicable	FREEZING POINT	Not Applicable
SPECIFIC GRAVITY (H₂O = 1)	1.1	VAPOR PRESSURE AT 20 C.	Not Applicable
VAPOR DENSITY (air = 1)	Not Applicable	SOLUBILITY IN WATER, % by wt.	Not Applicable
PERCENT VOLATILES BY VOLUME	Not Applicable	EVAPORATION RATE (Butyl Acetate = 1)	Not Applicable
APPEARANCE AND ODOR Depending on product may appear as bead, pellet, mesh, cake or powder, odorless			

IN CASE OF EMERGENCIES involving this material, further information is available at all times
In the USA 304 — 744-3487 In Canada 514 — 645-5311
For routine information contact your local supplier

Union Carbide requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information.

UNION CARBIDE CORPORATION □ MOLECULAR SIEVES DEPARTMENT
UNION CARBIDE CANADA LIMITED □ MOLECULAR SIEVES DEPARTMENT

PRODUCT: Molecular Sieve Type AW-300

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THRESHOLD LIMIT VALUE: 5 mg/m³ (ACGIH 1984-85) for respirable dust (nuisance particulate).

EFFECTS OF OVEREXPOSURE AND EMERGENCY AND FIRST AID PROCEDURES

EFFECTS OF A SINGLE (ACUTE) OVEREXPOSURE:

SWALLOWING — No evidence of adverse effects from available information

SKIN ABSORPTION — No evidence of adverse effects from available information.

INHALATION — May cause irritation of the nose and throat, accompanied by cough and chest discomfort

SKIN CONTACT — May cause irritation seen as local redness.

EYE CONTACT — May cause eye irritation seen as excess redness of the conjunctiva.

EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE: Repeated inhalation may cause lung damage

OTHER EFFECTS OF OVEREXPOSURE: None currently known.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Breathing of dust may aggravate asthma and inflammatory or fibrotic pulmonary disease

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION: Results of one mordenite study are available. A delayed fibrosis response in mice was seen following intraperitoneal injection of mordenite particles 0.4-6 microns in length and 0.05-0.67 microns in width. No malignant tumors seen.

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING — If ingested in large quantities, then drink 2 glasses of water. Induce vomiting if the patient is conscious.

SKIN CONTACT — Wash with soap and water.

INHALATION — Remove to fresh air. If breathing is difficult, oxygen may be administered. If breathing has stopped, administer artificial respiration.

EYE CONTACT — Immediately flush with water for 15 minutes.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHERS): No information available.

NOTE 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 accordingly.

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RESPIRATORY PROTECTION (specify type): Where there is excessive dustiness, wear a respirator selected as per OSHA 29 CFR 1910.134 and approved by NIOSH/MSHA

VENTILATION	LOCAL EXHAUST — As appropriate to minimize dust
	MECHANICAL (general) — Not Applicable
	SPECIAL — Not Applicable
	OTHER — Not Applicable

PROTECTIVE GLOVES: Recommended

EYE PROTECTION: Safety glasses or goggles selected as per OSHA 29 CFR 1910.133

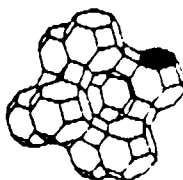
OTHER PROTECTIVE EQUIPMENT: Eyewash fountain

CAUTION: Causes eye irritation. Breathing dust may be harmful. May cause skin irritation. Open container slowly to avoid dust. Do not get in eyes. Avoid breathing dust and prolonged contact with skin. Use with adequate ventilation. Keep container closed. Wash thoroughly after handling. Do not ingest.

Before using you should know the hazards of the products to be adsorbed on the molecular sieve. The products could be flammable or toxic. You should know and follow all the safety precautions related to the adsorbed products.

OTHER HANDLING AND STORAGE CONDITIONS: pH range if in aqueous slurry 8-11

The opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide, it is the user's obligation to determine the conditions of safe use of the product.



**UNION
CARBIDE
MOLECULAR
SIEVES**

GENERAL OFFICES

IN THE USA

Union Carbide Corporation
Molecular Sieves Dept
39 Old Ridgebury Road
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Other offices in principal cities all over the world

IN CANADA

Union Carbide Canada Limited
Molecular Sieves Dept
123 Eglinton Avenue East
Toronto, Ontario M4P 1J3

FLASH POINT (test method)		Does not burn	AUTOIGNITION TEMPERATURE		Not Applicable
FLAMMABLE LIMITS IN AIR, % by volume		LOWER	Not Applicable	UPPER	Not Applicable

EXTINGUISHING MEDIA: Unused material will not burn. Use media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES: Depends on the use of the material. Used material may contain products 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.

UNUSUAL FIRE AND EXPLOSION HAZARDS: In their fresh unused state, molecular sieves are not flammable. When exposed to water, however, they can get quite hot. When first wetted they can heat to the boiling point of water. Flooding will reduce the temperature to safe limits.

STABILITY		CONDITIONS TO AVOID: Moisture (water) can cause rise in temperature which may result in burn.
UNSTABLE	STABLE	
	X	

INCOMPATIBILITY (materials to avoid): Sudden contact with high concentrations of chemicals having high heats of adsorption such as olefins, HCl, etc.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrocarbons and other materials that contact the molecular sieve during normal use can be retained on the sieve. It is reasonable to expect that decomposition products will come from these retained materials of use. The molecular sieve itself does not readily decompose unless subjected to extreme temperature or chemical conditions. If such decomposition did occur the product would include the mix of oxides listed in Section II.

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID: None currently known.
May Occur	Will not Occur	
	X	

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Sweep the spill area, collect and place the spilled material in a waste disposal container. Avoid raising dust.

WASTE DISPOSAL METHOD: Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, state and local regulations.