

# INSTALLATION INSTRUCTIONS

## DISPOSABLE CARTRIDGE MS-16

### FOR IN-LINE DESICCANT DRYER ID15/IND AND MINI DRYER MODEL MD4/IND

VAN AIR PART NUMBER: 26-0889

#### WHEN TO REPLACE CARTRIDGE:

Crystals in moisture indicator will change from blue to pink when molecular sieve in cartridge is saturated with moisture. Install a fresh cartridge when crystals in moisture indicator turn pink. When air supply is reconnected, crystals in moisture indicator will turn blue again and remain blue until another cartridge change is required.

#### WARNING

**BEFORE INSTALLING NEW CARTRIDGE, READ THE FOLLOWING INSTRUCTIONS CAREFULLY.**

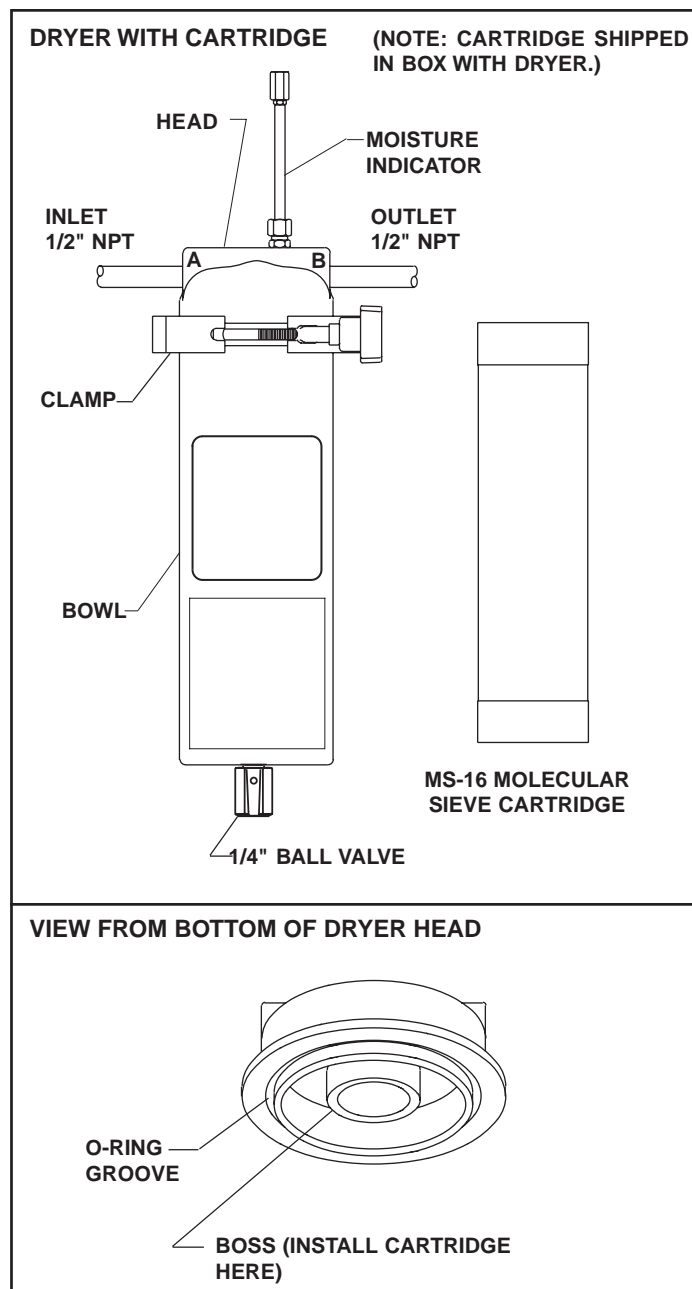
#### REPLACING OLD CARTRIDGE:

1. Close inlet and outlet shut-off valves (and open bypass if provided); or lock out all compressed air supply to dryer.
2. Slowly open ball valve on bottom of housing and allow unit to depressurize completely.

#### WARNING

**DO NOT PRESSURIZE MINI DRYER UNTIL MS-16 CARTRIDGE IS INSTALLED.**

3. Grasp bottom portion of housing (bowl) with one hand and turn clamp knob with the other to loosen. Slide clamp down and off vessel.
4. Remove used cartridge from head and discard the cartridge.
5. Remove new cartridge from packaging.
6. Push new cartridge onto boss of dryer head.
7. Reinstall bowl and clamp. Make sure that the bowl is tight against the head and the o-ring is correctly seated in the groove.
8. Close the ball valve and slowly pressurize the vessel. If any leaks occur, depressurize vessel completely and correct the problem before repressurizing.



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U.S. Department of Labor Occupational  
Safety and Health Administration (non-  
mandatory form)  
May be used to comply with OSHA's  
Hazard Communication Standard, 29  
CFR 1910.1200. Standard must be  
consulted for specific requirements.

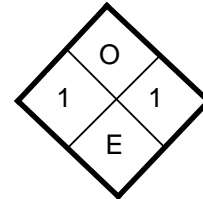
## Material Safety Data Sheet

### Section 1 – Chemical Product Information

Date Prepared: May 1, 2000

Product: **Molecular Sieve 1/8" & 1/16"**

Part No.: 33-0317, 33-0249 & 33-0265



### Section 2 – Hazardous Ingredients/Identity Information

#### Hazardous Components

(Specific Chemical Identity/Common Name(s))	CAS Registry Number	OSHA	Typical Wt. %	CERCLA RQ
Zeolites	1318-02-1	Y	>90%	Not Established
Quartz	14808-60-7	Y	<1.0%	Not Established
Kaolin	1332-58-7	Y	0-10%	Not Established
Bentonite clay	1302-78-9	Y	0-10%	Not Established
Clay, attapulgite	12174-11-7	Y	0-10%	Not Established
Sepiolite	15501-74-3	Y	0-10%	Not Established

The substances marked with a "Y" in the OSHA column are identified as hazardous chemicals according to the criteria of the OSHA Communication Standard (29 CFR 1910.1200)

This material is classified as hazardous under Federal OSHA regulation.

This product complies with TSCA inventory requirements. For chemical identity purposes, TSCA considers Zeolites as crystalline aluminosilicates consisting of a mixture of silicon oxide (CAS# 7631-86-9) & aluminum oxide (CAS# 1344-28-1) in various proportions with metallic oxides.

#### Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)

Immediate (Acute) Health	Y	Fire	N
Delayed (Chronic) Health	Y	Reactive	N
		Sudden Release of Pressure	N

#### WHMIS

D2A Carcinogen  
D2B Eye Irritant

### Section 3 – Physical Chemical Characteristics

<b>Boiling Point:</b>	Not applicable	<b>Vapor Density (Air=1):</b>	Not applicable
<b>Specific Gravity (Water=1):</b>	.64 - .72	<b>Solubility in Water:</b>	Insoluble.
<b>Vapor Pressure (mm Hg):</b>	Not applicable	<b>Evaporation Rate (Butyl Acetate=1):</b>	Not applicable
<b>Melting Point:</b>	Not applicable	<b>Appearance &amp; Odor:</b>	Off-White beads with no odor

### Section 4 – Fire and Explosion Hazard Information

<b>Flash Point:</b>	Not applicable	<b>Flash Point Method:</b>	Not applicable
<b>Upper Flammable Limit:</b>	Not applicable	<b>Lower Flammable Limit:</b>	Not applicable
<b>Fire Fighting Instructions:</b>	Non-flammable		
<b>Extinguishing Media:</b>	Use extinguishing agent applicable to surrounding fire conditions.		
<b>Fire and Explosion Hazards:</b>	None known.		

### Section 5 – Reactivity Information

<b>Stability:</b>	This material is chemically stable under normal and anticipated storage and handling conditions.
<b>Incompatibility (Materials to avoid):</b>	Reacts with HF and strong acids and alkalis.
<b>Hazardous decomposition/byproducts:</b>	None.
<b>Hazardous Polymerization:</b>	Will not occur.

Date Prepared: May 1, 2000

## Section 6 – Health Hazard Information

### Emergency Overview

Off-white beads with no odor.

#### CAUTION!

**MAY CAUSE EYE IRRITATION.**

**CANCER HAZARD. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE CANCER.**

Repeated and prolonged inhalation of respirable particles can cause lung cancer and delayed lung damaged (silicosis).

<b>Carcinogenicity:</b>	No.
<b>NTP:</b>	No.
<b>IARC Monographs:</b>	Quartz Class 2A carcinogen.
<b>OSHA Regulated:</b>	No.

### Emergency and First Aid Procedures

<b>Eyes:</b>	Flush with water for at least 15 minutes, lifting upper & lower eyelids.
<b>Skin:</b>	Flush with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse.
<b>Inhalation:</b>	Remove to fresh air.
<b>Ingestion:</b>	Do NOT induce vomiting. Give water to drink. Get medical attention immediately. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

#### IF IRRITATION DEVELOPS AND PERSISTS SEEK MEDICAL ATTENTION

### Potential Health Effects:

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Zeolites will become hot as they absorb water. Prolonged contact can cause burns to moist body tissues. Repeated and prolonged inhalation of this material may cause a form of disabling lung disease (commonly known as silicosis). Clinical signs and symptoms of silicosis include cough, shortness of breath, wheezing and impairment of lung function. Impairment of lung function may be progressive. In the usual case of silicosis, there is a slow deterioration of capacity for physical effort, decreased chest expansion, and an increased susceptibility to tuberculosis and other respiratory infections. Short term, extremely heavy exposures to dust of this material (particularly small-sized particles) can result in acute silicosis. This disease is rapidly progressive with diffuse pulmonary involvement, which may develop within months of initial exposure. Individuals with acute silicosis may suffer an abrupt onset of violent coughing, labored breathing and weight loss; death has been known to occur within one to two years. Please see Section 10 – Toxicological Information for more information.

## Section 7 – Precautions for Safe Handling and Use

### Small/Large Spills:

Stop the leak, if possible. Ventilate the space involved. Absorb, sweep up, and place in container for disposal. Reduce dust spreading with a water spray. Shut off or remove all ignition sources. Prevent waterway contamination. Construct a dike to prevent spreading. Protect workers with water spray. Collect run-off water and transfer to drums or tanks for later disposal. Avoid creating a dusty atmosphere. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

**Clean up procedures:** Transfer to containers, preparatory for later disposal. Avoid generation of dusts. Place in non-sparking containers for recovery or disposal. Remove from spill location. Flush area with water spray, collect rinsate.

### Waste Disposal Method:

Recover, reclaim or recycle when practical. Dispose of in accordance with federal, state and local regulations.

### Handling:

Avoid breathing dust. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Use only with adequate ventilation. Keep dry. Contact with water releases heat.

Date Prepared: May 1, 2000

**Storage:**

Keep material dry; moisture may affect product quality. Moist air or chemical vapors will reduce the operating life of this material. This material will release heat when absorbing water vapors. If a large quantity of this material quickly absorbs an equal amount of water, the material can become hot enough to cause thermal burns of the skin. Material recommended for re-packaging: high density polyethylene (HDPE), polypropylene (PP), polytetrafluoroethylene (PTFE), fiberboard with moisture barrier.

**Section 8 – Control Measures****Engineering Controls:**

Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

**Eye/Face Protection:**

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

**Skin Protection:**

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse contaminated skin promptly. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

**Respiratory Protection:**

Avoid breathing dust. When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR 1910.134.

**Airborne Exposure Guidelines for Ingredients**

<b>Exposure Limits</b>	<b>Value</b>
Kaolin	
ACGIH TWA	2 mg/m <sup>3</sup>
Quartz	
ACGIH TWA	0.1 mg/m <sup>3</sup>

-Only those components with exposure limits are printed in this section.

-Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.

**Section 9 – Toxicological Information**

Data on this material and/or its components are summarized below.

**Sodium Aluminosilicate**

Kidney effects were observed in rats and dogs administered high dose levels in their feed for one month, while blood effects were also observed in dogs. Long-term inhalation by rats and dogs produced inflammation in the lungs associated with accumulation of particulate. Chronic pneumonitis and acute bronchopneumonia were also seen in rats. No adverse effects were noted in rats and rabbits or their offspring following administration in the drinking water during pregnancy.

**Quartz**

Chronic inhalation of crystalline silica may cause a progressive pneumoconiosis (silicosis), a form of disabling lung disease (pulmonary fibrosis). Data from animals studies on crystalline forms of silica confirm the capacity of free crystalline silica to induce a fibrinogenic response in lungs. Studies on a variety of laboratory animals (rats, guinea pigs, rabbits, and monkeys) using inhalation as well as intratracheal routes of exposure indicate the ability of crystalline silica to produce silicosis similar to that seen in man. In addition, experiments in animals have confirmed human experience that the presence of crystalline silica in the lung increased susceptibility to tuberculosis and other lung infections. Crystalline silica inhaled in the form of quartz is classified as "carcinogenic

to humans” by the IARC, and respirable forms of crystalline silica are listed as substances that “may reasonably be anticipated to be carcinogens” by the National Toxicology Program. The IARC listing is based on the determination that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz from occupational exposures.

Epidemiology studies cited by IARC give indications of increased risk for lung cancer from inhaled crystalline silica (quartz) resulting from occupational exposure. Studies involving heavy industrial exposure to silica in granite and foundry workers, brick factories and sandblasting produced increased levels of protein and enzymes in urine, which is indicative of kidney damage.

## **Section 10 – Regulatory Information**

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### **Right to Know Lists**

### **Products Listed**

California Prop 65 – Carcinogen

California list of Known Carcinogens

Quartz

Massachusetts Right to Know

Massachusetts Right to Know Substance List

Quartz

New Jersey Right to Know

New Jersey Right to Know Substance List

Quartz & Zeolites

Pennsylvania Right to Know

Pennsylvania Hazardous Substance List

Kaolin & Quartz