

# Safety Data Sheet

Revision Date: 03/24/16      Supersedes: 02/26/16

**Desiccant: DE-32, Molecular Sieve  
(Type 4A beads)**

**PRODUCT NAME:** DE-32, Molecular Sieve

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## 1. IDENTIFICATION

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**Product identifier:** Molecular Sieve Type 4A

**Trade Name:** DE-32, Molecular Sieve

**Application of the substance / the mixture**

Adsorbent

Desiccant

**Details of the supplier of the safety data sheet**

SPX Flow Industrial

4647 S.W. 40<sup>th</sup> Avenue

Ocala, Florida 34474-5799 USA

1-352-237-1220

**Information department:** Health, Safety, & Environmental Department

**Emergency telephone number:** 1-352-237-1220 (Monday – Friday, 8:00 a.m. – 5:00 p.m. EST)

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## 2. HAZARDS IDENTIFICATION

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**Classification of the substance or mixture**

**Label elements:**

**GHS label elements:**

**Hazard pictograms:**



**Signal word:**

Warning

**Hazard statements:**

H316 – Causes mild skin irritation.

H320 – Causes eye irritation.

H335 – May cause respiratory irritation.

**Precautionary statements:**

P261 – Avoid breathing dust/fume/gas/mist/vapors/spray

P264 – Wash hands thoroughly after handling

P304 & P340 – If inhaled; Remove person to fresh air and keep comfortable for breathing

P305 & P351 & P338 – If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P312 – Call Poison Center/Doctor if you feel unwell

P227 & P313 – If eye irritation persists; get medical advice/attention

P332 & P313 – If skin irritation occurs get medical advice/attention

P501 – Dispose of contents/container within all applicable laws and regulations

P403 & P233 – Store in well ventilated place / keep container tightly closed

**GHS Classification System:**

Health Rating: 5 – Minimal Hazard

Flammability Rating: 5 – Minimal Hazard

Reactivity Rating: 5 – Minimal Hazard

Contact Rating: 4 – SLIGHT Hazard

**Emergency overview:**

**CAUTION:**

Avoid inhalation.

Prolonged and repeated exposure of dust may cause lung damage.

Contact with powders or dusts may irritate the eyes, skin and respiratory tract.

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## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material or Component: Sodium Aluminosilicate 4A, Zeolite 4A

Chemical Name: 4A Molecular Sieve

Chemical Formula:  $\text{Na}_{12}[(\text{AlO}_2)_{12}] \text{H}_2\text{O}$

CAS# 1344-00-9

### Composition:

| Component       | Product identifier (CAS No.) | Concentration |
|-----------------|------------------------------|---------------|
| Silicon Dioxide | 7631-86-9                    | < 50 %        |
| Aluminum Oxide  | 1344-28-1                    | < 30 %        |
| Sodium Oxide    | 1313-59-3                    | < 30 %        |
| Magnesium Oxide | 1309-48-4                    | < 5 %         |

| Ingredient Name   | CAS Registry Number | Typical %    | OSHA |
|-------------------|---------------------|--------------|------|
| Zeolites          | 1318-02-1           | >90% by Wt.  | N    |
| Kaolin            | 1332-58-7           | 0-10% by Wt. | N    |
| Bentonite Clay    | 1302-78-9           | 0-10% by Wt. | N    |
| Clay, attapulgite | 12174-11-7          | 0-10% by Wt. | N    |
| Quartz            | 14808-60-71         | <0.2% by Wt. | Y    |

The substance(s) marked with "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

The 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# 7931-86-9) and aluminum oxide (CAS# 1344-28-1) in various proportions with metallic oxides.

## 4. FIRST AID MEASURES

### Description of first aid measures:

**After Eye Contact:** Immediately flush eyes with water for at least 15 minutes. Remove any contact lenses and open eyes wide. Continue for 15 minutes. Seek medical attention if discomfort continues.

**After Skin Contact:** Wash skin thoroughly with soap and water for several minutes. If irritation develops or persists, get medical attention.

**After Inhalation:** Move person to fresh air. For breathing difficulties oxygen may be required. If breathing stops, provide artificial respiration. Get medical attention if discomfort continues.

**After Ingestion:** DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of product is ingested, get medical attention immediately. Loosen tight clothing such as a collar, tie, or belt. Administer plenty of water.

### Information to Physician:

This product is an adsorbent/desiccant that generates heat on contact with water. Contact with soft tissue or mucous membranes may cause thermal burns. The used product may have adsorbed hazardous materials. Identify adsorbed materials and treat symptomatically.

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## 5. FIRE FIGHTING MEASURES

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**Product has a flammable rating:** 5 – Minimal Hazard

**Extinguishing Media**

**Suitable extinguishing agents:**

No special measures required. Choose extinguishing media that is appropriate for the surrounding fire.

**Special hazards arising from the substance or mixture:**

Spent or used product may contain adsorbed flammable or otherwise hazardous substances upon exposure to heat or water. Product user must identify adsorbed substances and inform fire-fighters of potential hazards.

**Advice for Firefighters**

**Required Protective Equipment:**

Standard PPE and equipment. Active product gives off heat when exposed to water and can burn tissue. Flush with water to dissipate the heat. If dusty conditions prevail, a dust mask is recommended.

**Specific methods:** No special methods required.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Emergency procedures:**

Personnel not wearing appropriate protective equipment should be excluded from area of spill area until clean-up is complete.

**Personal precautions / protective equipment:**

Cleanup personnel should wear personal protective equipment to avoid product contact with skin and eyes. Personnel should also avoid inhalation exposures. Spills of product in bead form may cause fall hazards.

**Environmental precautions:**

Do not allow large amounts of product to enter public drainage system or open water courses.

**Methods and material for containment and cleaning up:**

Sweep/gather material and place in appropriate container for disposal. Wash spill area thoroughly with a large amount of water. Vacuum or wet methods are preferred. Avoid dust generation during cleanup.

**Special Procedures:**

Product gives off heat when exposed to water.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:**

Do not inhale dusts generated from this product. Do not get in eyes. Avoid contact with skin. Wash thoroughly after handling product. Keep product away from moisture. Considerable heat is generated when product is mixed with water.

**Storage Procedures:**

Store in a dry place. Open container slowly to avoid creating or raising dust. Open bung holes on drums before removing the lids to vent and pressure/vacuum. Product shelf life is unlimited if kept dry in an airtight container. To prevent loss of product effectiveness, ensure containers are tightly resealed after opening. Do not return used or unused product to original container.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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**Exposure Controls:**

**Engineered Measures:** Provide general and local exhaust ventilation to control dust.

**Process Conditions:** Provide eyewash station.

**Personal Protective Equipment:**

Gloves and respiratory equipment should be available to employees handling the product.

**Respiratory protection:** NIOSH approved dust mask should be available to employees handling the product.

**Protection of Hands:** Gloves should be available to employees handling the product.

**Eye protection:** Safety glasses with side-shields.

**General protective and hygienic measures:**

The usual precautionary methods for handling chemicals should be followed: Keep away from food and beverage; remove contaminated clothing immediately; wash hands before breaks or eating; avoid contact with eyes and skin.

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## Airborne Exposure Guidelines for Ingredient Exposure Limit

| Ingredient   | Regulation  | Value                 |
|--------------|---|-----------------------|
| Kaolin       | ACGIH TWA Respirable fraction   | 2mg/m3                |
|              | OSHA TWA PEL Total Dust   | 15mg/m3               |
|              | OSHA TWA PEL Respirable fraction  | 5 mg/m3               |
| Cristobalite | ACGIH TWA Respirable fraction   | 0.025 mg/m3           |
| Tridymite    | ACGIH TWA As Respirable Particles (Insoluble or poorly Soluble) Not otherwise specified | 3 mg/m3               |
|              | ACGIH TWA As Inhalable Particles (Insoluble or poorly Soluble) Not otherwise specified  | 10 mg/m3              |
|              | OSHA TWA PEL As Silica: Crystalline Tridymite (Total Dust)                              | 0.15 mg/m3            |
|              | OSHA TWA PEL As Silica: Crystalline Tridymite (Respirable)                              | 0.5 mg/m3 (1.2 mppcf) |
|              |   |                       |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

#### General Information

##### Appearance:

Form: Beads  
Color: Light Tan

Odor: Odorless

pH-value: Not Available

#### Change in condition

Melting Point/Melting Range: Not Available

Boiling Point/Boiling Range: Not Available

Flash Point: Not Available

Flammability: Non-flammable

Ignition Temperature: Not Available

Decomposition Temperature: Not Available

Auto igniting: Not Available

#### Explosion Limits:

Lower: Not Available

Upper: Not Available

Vapor Pressure (mm Hg): Not Available

Water Solubility: Insoluble

Specific Gravity: 2.10

Bulk Density (kg/m<sup>3</sup>): Not Available

Vapor Density (Air = 1): Not Available

Evaporation Rate (Butyl Acetate = 1): Not Available

Solubility in Water: Insoluble.

Partition Coefficient (N-octanol/water): Not Available

#### Viscosity:

Dynamic: Not Available

#### Other Information:

No further relevant information available.

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## 10. STABILITY AND REACTIVITY

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**Stability:**

Product is stable under normal temperature conditions and recommended use.

**Hazardous polymerization:**

Will not polymerize.

**Conditions to Avoid:**

Water contact with product.

**Hazardous decomposition products:**

None.

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## 11. TOXICOLOGICAL INFORMATION

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**Primary routes of exposure**

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Information on toxicological effects**

**Acute Toxicity:**

**General Product Information:**

The following acute toxicity data has been reported for this product and/or its components:

**Chronic Toxicity/Effects**

Acute eye, skin, and respiratory tract irritation.

**Repeated dose toxicity**

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Carcinogenicity:** Crystalline silica inhaled in the form of quartz is classified as a carcinogenic to humans (Group 1) by the International Agency for Research on Cancer (IARC), and respirable forms of crystalline silica are listed as substance known to be a human carcinogen by the National Toxicology Program. Studies by the IARC give indications of increased risk for lung cancer from inhaled crystalline silica (quartz) resulting from occupational exposure.

**Germ cell mutagenicity:** No information available.

**Reproductive toxicity:** No information available.

**Specific target organ toxicity (single exposure):** No information available.

**Specific target organ toxicity (repeated exposure):** Chronic inhalation of crystalline silica may cause a progressive pneumoconiosis (a disabling lung disease) called silicosis. Data from animal studies on crystalline forms of silica confirm the capacity of free crystalline silica to induce a fibrinogenic response in the lungs. Experiments in animals have confirmed that the presence of crystalline silica in the lung have increased susceptibility for tuberculosis and other lung infections in humans.

**Symptoms/injuries after skin contact:**

May cause skin irritation.

**Symptoms/injuries after eye contact:**

May irritate the eyes.

**Symptoms/injuries after ingestion:**

May cause discomfort if swallowed.

**Symptoms/injuries after inhalation:**

The drying action of this product can cause irritation of the mucous membranes of the nose and throat. Avoid prolonged breathing of dust.

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## 12. ECOLOGICAL INFORMATION

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**Toxicity:**

**Aquatic Toxicity:**

**Fish toxicity**

LC50 (fish)                      No information available.

**Aquatic invertebrates**

LC50 (Daphnia)                No information available.

**Persistence and Degradability:** No information available.

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**Bio-accumulative Potential:** No further relevant information available.

**Behavior in Environmental Systems:**

**Mobility in Soil:** No information available.

**Other Adverse Effects**

**Acute Fish Toxicity:** No information available.

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## 13. DISPOSAL CONSIDERATION

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### Disposal methods

**Container disposal:**

Dispose of in accordance with national, state and local regulations. Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

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## 14. TRANSPORT INFORMATION

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**US DOT Information:**

**Shipping Name:** This material is not regulated as a hazardous material for transportation.

**Hazard Classification:** Non-hazardous.

**Labels Required:** None.

**Hazardous Waste:** None.

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## 15. REGULATORY INFORMATION

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**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

**Hazard Categories under Criteria of SARA Title III Rules (40 CFR Part 370)**

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

**TSCA Memo for Product**

Clay, attapulgite CAS# 12174-11-7 is a naturally occurring component, it is TSCA exempt.

Crystalline silica has the following CAS#'s:

Cristobalite: 14464-46-1; Quartz: 14808-60-7; Tripoli: 1317-95-9; Tridymite: 15468-32-3

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) and aluminum oxide (CAS# 1344-28-1) in various proportions with metallic oxides.

**Ingredient Related Regulatory Information:**

**SARA Reportable Quantities**

**CERCLA RQ**

**SARA TPQ**

|                   |    |    |
|-------------------|----|----|
| Kaolin            | NE |    |
| Cristobalite      | NE |    |
| Clay, attapulgite | NE |    |
| Zeolites          | NE |    |
| Sepiolite         | NE | NE |
| Tridymite         | NE | NE |

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## California Prop 65 – Carcinogen

This product does contain the following chemical(s), as indicated below, currently on the California list of Known Carcinogens

Cristobalite  
Tridymite

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## Massachusetts Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

Cristobalite  
Kaolin  
Tridymite

## New Jersey Right to Know

This product does contain the following chemical(s), as indicated below, currently on the New Jersey Right to Know List Substance List.

Cristobalite  
Tridymite  
Zeolites

## Pennsylvania Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Right to Know List Substance List.

Cristobalite  
Kaolin  
Tridymite

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## 16. OTHER INFORMATION

**Preparation Date:** March 24, 2016

**Revision Number:** 2

**SDS Status:** Changes in sections 1, 2, 3, 8, 11 and 15.

**Supersedes:** 02/26/16.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Desiccant: DE-32, Molecular Sieve  
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## Safety Data Sheet

### ATTENTION: Plant Manager/Safety Director:

This SDS supersedes all prior data sheets received for this product. We urge you to study it carefully. This is provided with each container as our way of communicating Health, Safety, and Environmental Protection Information to our customers.

This information is provided to ensure safe handling and storage of our products in accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200. The information contained in this SDS must be passed on to all employees in your firm that handle and/or become involved in the implementation or control of operations involving use of the product. We strongly urge you to forward this SDS to all parties that have a need to know the information contained herein!

### LEGEND:

|        |   |       |                   |
|--------|---|-------|-------------------|
| ACGIH  | American Conference of Government Industrial Hygienists                         | m     | meter             |
| AICS   | Australian Inventory of Chemical Substances                                     | cm    | centimeter        |
| CAS    | Chemical Abstract Services  | mm    | millimeter        |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act           | in    | inch              |
| CFR    | Code of Federal Regulations   |       |                   |
| CPR    | Cardio-Pulmonary Resuscitation  | g, gm | gram              |
| DOT    | Department of Transportation  | kg    | kilogram          |
| DSL    | Domestic Substances List (Canada)   | lb    | pound             |
| EINECS | European Inventory of Existing Commercial Chemical Substances                   | µg    | microgram         |
| ENCS   | Japan - Existing and New Chemical Substances                                    |       |                   |
| EWA    | European Waste Catalog  | ppm   | parts per million |
| EPA    | Environmental Protection Agency   | ft    | feet              |
| IARC   | International Agency for Research on Cancer                                     |       |                   |
| LC     | Lethal Concentration  |       |                   |
| LD     | Lethal Dose   |       |                   |
| MAK    | Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration" |       |                   |
| NDSL   | Non-Domestic Substances List (Canada)   |       |                   |
| NE     | Non Established   |       |                   |
| NIOSH  | National Institute of Occupational Safety and Health                            |       |                   |
| NTP    | National Toxicology Program   |       |                   |
| OEL    | Occupational Exposure Limit   |       |                   |
| OSHA   | Occupational Safety and Health Administration                                   |       |                   |
| PEL    | Permissible Exposure Limit  |       |                   |
| PIN    | Product Identification Number   |       |                   |
| RCRA   | Resource Conservation and Recovery Act  |       |                   |
| SARA   | Superfund Amendments and Reauthorization Act                                    |       |                   |
| STEL   | Short Term Exposure Limit   |       |                   |
| TCLP   | Toxic Chemicals Leachate Program  |       |                   |
| TDG    | Transportation of Dangerous Goods   |       |                   |
| TLV    | Threshold Limit Value   |       |                   |
| TSCA   | Toxic Substances Control Act  |       |                   |
| TWA    | Time Weighted Average   |       |                   |

The information contained herein is based upon data considered true and accurate. However, the supplier makes no warranties (express or implied) as to the accuracy or adequacy of the information contained herein or the results to be obtained from the use thereof. This information is offered solely for the user's consideration, investigation and verification. Since the use and conditions of use of this information and the material described herein are not within the supplier's control, the supplier assumes no responsibility for injury to the user or third persons. The material described herein is sold only pursuant to the supplier's Terms and Conditions of Sale, including those limiting warranties and remedies contained therein. It is the responsibility of the user to determine whether any use of this data and information is in accordance with applicable Federal, State or Local Laws and Regulations.