



MATERIAL SAFETY DATA SHEET

Revision Number A699310C
6/2/08

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY / UNDERTAKING

Product name YSI 9612 Cadmium Column
Synonyms None
Chemical characterization Packed column
Manufacturer, importer, supplier YSI Inc.
1700/1725 Brannum Lane
Yellow Springs, OH 45387
USA
EMERGENCY TELEPHONE NUMBER (937) 767-7241

2. COMPOSITION / INFORMATION ON INGREDIENTS

| CAS | Chemical Name | % Weight | ACGIH TWA | OSHA* | IARC* | NTP* |
|-----------|---------------|----------|---|---|---|---------------------|
| 7440-43-9 | Cadmium | 100 | 0.01 mg/m ³ TWA; 0.002 mg/m ³ TWA (respirable fraction) | 0.2 mg/m ³ TWA (dust); 0.1 mg/m ³ TWA (fume) | Monograph 58, 1993 (evaluated as a group) | Known carcinogen |

* IARC - Group 1 (Carcinogenic to humans)

* NTP - Report on Carcinogens - Known Carcinogens

* OSHA - Regulated Carcinogens

3. HAZARDS IDENTIFICATION

Emergency Overview

USE ALL NECESSARY PERSONAL PROTECTION WHEN HANDLING THIS MATERIAL.

If symptoms from exposure persist seek medical attention.

| | |
|-------------------------------------|--|
| Eye Contact | Contact with eyes may cause irritation |
| Skin Contact | Contact with skin may cause irritation |
| Inhalation | Inhalation of this material may be fatal |
| Ingestion | Harmful if swallowed, may be fatal |
| General Advice | Danger! Exposure to this material could be fatal. May cause liver and kidney damage. Get medical attention if effects persist. |
| Properties Affecting Health | Cancer suspect agent. May cause reproductive and fetal effects |
| Principle Routes of Exposure | Absorption, inhalation, and ingestion |

4. FIRST AID MEASURES

| | |
|-----------------------|--|
| General Advice | If exposure symptoms persist, seek medical attention. |
| Skin Contact | Wash exposed areas with soap and water for 15 minutes. Remove contaminated clothing and wash them before wearing again. Seek medical attention if effects persists |
| Eye Contact | Immediately flush with plenty of water. After initial flushing, remove and contact lenses and continue flushing for at least 15 minutes If eye irritation persists, seek medical attention. |
| Inhalation | Remove from exposure and move to fresh air immediately. Get medical attention immediately. If breathing is difficult give oxygen. Do not use mouth to mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as bag or mask. |
| Ingestion | Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or |

| | |
|--------------------------------------|--|
| | water. Never give anything by mouth to an unconscious person. Get medical attention immediately. |
| Notes to Physician | Treat symptomatically |
| Protection of First-Aiders | Use necessary protective equipment |
| Aggravated Medical Conditions | Users with skin conditions (eczema, psoriasis, etc), respiratory conditions (asthma, bronchitis, emphysema, etc), or with chemical sensitivities should take protective precautions. |

5. FIRE-FIGHTING MEASURES

| | |
|--|---|
| Flash Point | NA |
| Suitable Extinguishing Media | Carbon dioxide (CO2) Water spray Dry chemical Alcohol-resistant foam |
| Extinguishing media which must not be used for safety reasons | No information available |

Specific Hazards

| | |
|---|---|
| Special exposure hazards rising from the substance or preparation itself, its combustion products, or released gases | Material can spontaneously ignite when exposed to air at normal or slightly elevated temperatures. Dust can be explosion hazard when exposed to heat or flame. Flammable solid, may burn rapidly with flare burning effect. May re-ignite after fire is extinguished. |
| Special protective equipment for firefighters | As with any fire, wear self contained breathing apparatus pressure-demand, MSHA/ NIOSH (approved or equivalent) and full protective gear. |

Specific Methods

| | | | | |
|---|-----------------|--------------|--------|-----------|
| NFPA (National Fire Protection Association) | Health=4 (high) | Reactivity=4 | Fire=4 | Special=4 |
| HMIS (Hazardous Material Information System) | Health=4 (high) | Reactivity=4 | Fire=4 | Special=4 |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Use necessary personal protective equipment Ensure adequate ventilation, especially in confined areas |
| Environmental precautions | Should not be released into the environment Prevent product from entering drains |
| Methods for cleaning up | Ensure adequate ventilation Remove all sources of ignition Avoid dust formation Retrieve any useable product and store in properly marked containers. |

7. HANDLING AND STORAGE

Handling

| | |
|---|--|
| Technical Measures / Precautions | Use only in areas provided with adequate ventilation. |
| Safe Handling Advice | <ul style="list-style-type: none"> • Wear personal protective equipment • Keep away from heat and flame • Fine dust dispersed in air may ignite |

Storage

| | |
|---|---|
| Technical Measures / Precautions | <ul style="list-style-type: none"> • Keep containers tightly closed. Discard any material that may be contaminated. • Keep in properly labeled containers • Keep away from heat • Store in tightly closed container. Store in cool, dry, well ventilated area away from incompatible substances |
| Incompatible Products | <ul style="list-style-type: none"> • Avoid strong acids, and oxidizing agents. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|--|--|
| Engineering measures | <ul style="list-style-type: none">• Ensure eyewash station is readily available• Ensure adequate ventilation |
| Personal protective equipment | |
| Hand Protection | <ul style="list-style-type: none">• Wear appropriate protective gloves |
| Eye protection | <ul style="list-style-type: none">• Wear tightly fitting safety goggles or safety glasses with side-shields |
| Respiratory Protection | <ul style="list-style-type: none">• Wear suitable respiratory equipment when ventilation is insufficient• Ensure adequate ventilation before handling any chemical. |
| Skin and Body Protection | <ul style="list-style-type: none">• Wear light weight protective clothing to protect exposed skin• Chemical resistant apron |
| Hygiene measures | <ul style="list-style-type: none">• Handle in accordance with good industrial hygiene and safety practice• Keep away from food, drink and animal feeding material |
| Environmental exposure controls | <ul style="list-style-type: none">• No information available |

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

| | |
|-------------------|--------------------------|
| Form | Solid, 12-20 mesh |
| Appearance | Silver/white granules |
| Odor | No information available |

Important Health Safety and Environmental Information

| | |
|------------------------------|--------------------------|
| Boiling Point / Range | 765 C |
| Flash Point | No information available |
| Vapor Pressure | 1mm Hg@394 C |
| Water Solubility | Insoluble |
| Specific Gravity | 8.65 |

10. STABILITY AND REACTIVITY

| | |
|---|---|
| Stability | <ul style="list-style-type: none">• Stable under normal conditions |
| Conditions to Avoid | <ul style="list-style-type: none">• Heat, flames and sparks |
| Hazardous Decomposition Products | <ul style="list-style-type: none">• When heated, possible nitrogen oxides (NOx) and hydrogen cyanide fumes emitted.• Toxic cadmium oxide fumes |
| Polymerization | <ul style="list-style-type: none">• Polymerization does not occur |

11. TOXICOLOGICAL INFORMATION

| | |
|-----------------------------|--|
| Skin Irritation | |
| Eye Irritation | |
| Inhalation | <ul style="list-style-type: none">• Inhalation of dust may cause irritation of respiratory tissue. |
| Ingestion | <ul style="list-style-type: none">• Harmful if swallowed. Nausea, vomiting, diarrhea (detergent effects) |
| Sensitization | |
| Chronic Toxicity | <ul style="list-style-type: none">• Avoid repeated exposure |
| Specific Effects | |
| Carcinogenic Effects | <ul style="list-style-type: none">• Cancer agent suspect |
| Mutagenic Effects | <ul style="list-style-type: none">• May cause reproductive and fetal effects |
| Target Organ Effects | <ul style="list-style-type: none">• May cause liver and kidney damage |
| LD50/oral/rat | <ul style="list-style-type: none">• 225 mg/Kg |

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

Component information

| CAS | Chemical Name | % Weight | ACGIH* | OSHA* |
|-----------|---------------|----------|----------------------|-----------------------|
| 7440-43-9 | Cadmium | 100 | 50 µg/m ³ | 200 µg/m ³ |
| | | | | |

* ACGIH - Occupational Exposure Limits - TLV

* OSHA - TWA

Product Information

| | |
|-------------------------|---------------------------|
| Aquatic Toxicity | No information available. |
|-------------------------|---------------------------|

Other Information

| | |
|---|---------------------------|
| Ozone Depletion Potential; ODP; (R-11=1) | No information available. |
| Global Warming Potential (GWP) | No information available. |
| Additional Ecological Information | No information available. |
| Mobility | No information available. |
| Bioaccumulative Potential | No information available. |
| Ecotoxicity Effects | No information available. |
| Aquatic Toxicity | No information available. |

13. DISPOSAL CONSIDERATIONS

| | |
|--|---|
| Waste From Residues / Unused Products | <ul style="list-style-type: none">Dispose of in accordance with local regulations |
| Contaminated Packaging | <ul style="list-style-type: none">Dispose of in accordance with local regulations |

14. TRANSPORT INFORMATION

DOT
UN-No
Proper shipping name
Packing group
Subsidiary Risk
Description

15. REGULATORY INFORMATION

U.S. Inventories

| CAS | Chemical Name | % Weight | ACGIH* |
|-----------|---------------|----------|---|
| 7440-43-9 | Cadmium | 100 | 0.01 mg/m ³ TWA; 0.002 mg/m ³ TWA (respirable fraction) |
| | | | |

* ACGIH - Occupational Exposure Limits - TWA's

International Inventories

| CAS | Chemical Name | % Weight | EUOED* |
|-----------|---------------|----------|--------------------------|
| 7440-43-9 | Cadmium | 100 | No information available |
| | | | |

* EUOED - EU Occupational Exposure Directive (98/24/EC) Indicative Occupational Exposure Limit Values (IOELV)

16. OTHER INFORMATION

Literary Reference None.
Prepared By YSI, Inc.

End of Safety Data Sheet.