



Carbon Monoxide (LK) Purifier Media

MATERIAL SAFETY DATA SHEET

Environmental, Health, & Safety

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Entegris, Inc.

6975 Flanders Drive
San Diego, CA 92121
Information: 858-452-0124

CHEMTREC Emergency telephone Numbers:

United States: 800-424-9300
International: 703-527-3887 (collect)

Product Number: Entegris (LK) Series Purifiers
Product: Entegris Carbon Monoxide Gas Purifier media
Chemical name: Chemical Mixture
Product use: Entegris (LK) Series Purifiers remove moisture and metal carbonyls from Carbon Monoxide gas

MSDS Number: 8005623
Issue date: July 22, 2005
Rev. date: December 7, 2006
Revision: B

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components in the solid mixture inside the purifier body

<u>COMPONENT</u>	<u>CAS No.</u>	<u>Percent</u>
Proprietary	Proprietary	100

Note: See Section 8 for Exposure Limits and Section 11 for Toxicological Information.

SECTION 3 – HAZARDS IDENTIFICATION AND EMERGENCY OVERVIEW

Appearance: Solid Mixture, light and dark particles. Odorless.

Flash Point: Not Determined

Suspected Cancer Hazard: Risk of cancer depends on route, duration and level of exposure.

Health Hazards: Causes eye, skin and respiratory tract irritation. May cause allergic skin and respiratory reaction. Harmful if swallowed. May cause gastrointestinal irritation, headache, nausea, vomiting and diarrhea.

This product will remain stable when housed in the purifier body.

Routes of Entry:

Eyes? YES Skin? YES Inhalation? YES Ingestion? YES

Potential Health Effects:

EYE CONTACT: Causes irritation.

SKIN CONTACT: Causes irritation, dermatitis and drying of skin.

INHALATION of dust may cause irritation of the respiratory tract and coughing

INGESTION causes gastrointestinal irritation with nausea, vomiting, diarrhea, and possible central nervous system depression.

Carcinogenicity:

NTP? Yes IARC? Yes OSHA? NO

Chronic Health Hazards:

Prolonged or repeated inhalation or ingestion may cause lung, thorax & respiratory system effects. May cause liver and kidney damage. May affect the blood and blood system. May affect the heart and cardiovascular system.

Medical Conditions Generally Aggravated by Exposure:

Pulmonary disorders. Skin ailments. Kidney and liver disorders.

NOTE: See Section 8 for Exposure Limits, Section 11 for Toxicological Information and Section 12 for Ecological Information.

SECTION 4 – FIRST AID MEASURES

In the unlikely event that the purifier media is liberated from the purifier body these health hazards may arise from inhalation, ingestion, and or/contact with the skin and/or eyes

Eye Contact: Immediately flush eyes with plenty of water for at least 15min. Get medical attention immediately.

Skin Contact: Remove contaminated clothing immediately. Wash with soap and plenty of water. If irritation persists, call a physician.

Inhalation: Remove exposed person to fresh air immediately. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention immediately.

Ingestion: Procedures normally not needed. If large quantities are ingested, seek medical attention.

SECTION 5 – FIRE-FIGHTING MEASURES

Flash Point: Not Determined

Auto-Ignition: Not Applicable

LEL: Not Applicable

UEL: Not Applicable

Negligible fire hazard. High temperature will cause increase in internal pressure.

NFPA Hazard Classification:

Health: 2 Flammable: 0 Reactivity: 0

HMS Hazard Classification:

Health: 2* Flammable: 0 Reactivity: 0 Special: C

* Indicates the possibility of chronic health effects. See Chronic Health Hazards in Section 3 for more information

Extinguishing Media: Use extinguishing agents appropriate for the surrounding fire.

Special Fire-Fighting Procedures: Wear NIOSH/MSHA approved positive-pressure self-contained breathing apparatus and protective clothing as specified in 29 CFR 1910.156.

Unusual Fire and Explosion Hazards: This product will remain stable when housed in the purifier body. If possible to do so safely, move housings from fire area.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Use proper personal protective equipment as indicated in Section 8.

Sweep up using dry procedure; avoid creating dust. Place into a suitable container for disposal. Notification of the National Response Center (800-424-8802) may be required. Refer to EPA, DOT and applicable state and local regulations for current response information.

It is recommended that each user establish a spill prevention, control and countermeasure plan (SPCC). Such plan should include procedures applicable to proper storage, control and clean up of spills, including reuse or disposal as appropriate (see Section 13: Disposal Consideration).

****Note**** In the unlikely event that the purifier media is liberated from the purifier body the above procedures should be followed. Additionally, proper exposure controls and personal protection equipment should be used (see Section 8: Exposure Control/Personal Protection), and disposal of the material should be in accordance with Section 13: Disposal Considerations.

SECTION 7 - HANDLING AND STORAGE

Store in cool dry location, away from sources of heat to avoid increase in internal pressure.

****Note**** In the unlikely event that the purifier media is liberated from the purifier body the following procedures should be observed.

Notify Safety personnel. Wash thoroughly after handling media. Keep container closed. Avoid breathing dust. Store in cool, dry location away.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits Ingredients:	PEL-OSHA	TLV-ACGIH
Media Mixture	15mg/m ³ (Total Dust)	10mg/m ³ (Respirable)
CAS NO.: Chemical mixture	1mg/m ³ (Respirable)	0.2mg/m ³ (Respirable)

Unless otherwise noted, all values are reported as 8-hour Time-Weighted Averages (TWAs) and total dust (particulates only). All ACGIH TLVs refer to the 1998 Standards. All OSHA PELs refer to 29 CFR Part 1910.134 Air Contaminants: Final Rule. January 19, 1989.

Respiratory Protection: Respirator use is not required. A NIOSH/MSHA-approved respirator recommended for dust if media is liberated from purifier body.

Ventilation and Personal Protection: Under conditions of normal use, personal exposure to contents of housing is unlikely. If planned procedure is likely to result in exposure, wear butyl gloves and full-face shield to protect skin and eyes.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Particulate Solid in Stainless Steel housing.

Odor: Odorless

Specific Gravity (H₂O=1): Not available

Melting Point: Not Determined

Vapor Pressure (mm Hg): Not Applicable

Vapor Density (Air=1): Not Applicable

Evaporation Rate: Not Applicable

% Solubility in Water: Insoluble

pH: Not Determined

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable under normal conditions of temperature and pressure.

Hazardous Polymerization: None Expected.

Incompatibility (Materials to Avoid): Oxidizing agents, water and strong acids.

Hazardous Decomposition or By-Products: Metal oxide fumes. Oxides of nitrogen.

SECTION 11- TOXICOLOGICAL INFORMATION

Acute Effects: Possible skin, eye, and mucous membrane irritation.

Exposure Limits: Under conditions of normal use, personal exposure to contents of the housing is unlikely. Provide exhaust ventilation system to meet exposure limits of the gas being purified with this product.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available.

Environmental Fate: No data available.

SECTION 13 – DISPOSAL CONSIDERATIONS

The components of this resin are not listed as RCRA D, F, P or U Series hazardous wastes. Wasted should be disposed of in a manner consistent with federal, state and local regulations.

Federal, State, and Local disposal laws and regulations will determine the proper waste disposal/recycling/reclamation procedure. All waste materials should be reviewed to determine the applicable hazards (testing may be necessary). Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected.

****NOTE**** Chemical additions, processing or otherwise altering this material may make the waste management information presented above incomplete, inaccurate or otherwise inappropriate.

As local regulations may vary; all waste must be disposed/recycled/reclaimed in accordance with Federal, State, and Local environmental control regulations.

SECTION 14 – TRANSPORT INFORMATION

Carbon Monoxide Reactive Mixture is not regulated by US Department of Transportation as a hazardous material or by ICAO/IATA or IMO regulations as dangerous goods.

INTERNATIONAL

UN Number: Not Applicable

UNITED STATES

EPA Waste Number: Not Regulated
DOT Classification: Not Applicable
DOT Proper Shipping Name: Not Applicable

Packing Group: Not Applicable

CANADA

PIN Number: Not Applicable
TDG Class: Not Applicable

EC DGL: Not Applicable

SECTION 15 – REGULATORY INFORMATION

US FEDERAL REGULATIONS

TSCA: IN TSCA, see regulations in 40 CFR 700 for details.

SARA 311 and 312 Hazard Categories

Immediate (Acute) Health Hazard: Yes
Delayed (Chronic) Health Hazard: Yes
Fire Hazard: No
Reactivity Hazard: No
Sudden Release of Pressure: No

SARA Section 313 Notification: None

OZONE DEPLETING SUBSTANCES (ODS): This product neither contains nor is manufactured with an ozone depleting substance subject to the labeling requirements of the Clean Air Act Amendments 1990 and 40 CFR Part 82.

VOLATILE ORGANIC COMPOUNDS (VOC): None

US STATE REGULATIONS

California Proposition 65 – Carcinogen

WARNING: This product contains chemicals known to the State of California to cause cancer.

VOLATILE ORGANIC COMPOUND (CARB): Not determined

CANADIAN REGULATIONS

WHMIS Classification: This product, as a manufactured article, is exempt from WHMIS classification.

EUROPEAN REGULATIONS

EINECS: Yes

OTHER REGULATIONS

MITI (Japan): Yes

AICS (AUSTRALIA): Yes

SECTION 16 – OTHER INFORMATION

All rights reserved. The above information is believed to be current and accurate; however, Entegris, Inc. has performed no analysis and makes no warranty with respect to such information and assumes no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.