



Luminousgard® Gas Purifier
containing Alkali and Acid
Treated Activated Carbons

Material Safety Data Sheet

Section I - CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Manufacturer's Name: Entegris, Inc.	Emergency Telephone Number: CHEMTREC USA: 800-424-9300 International: 703-527-3887 (Collect)
Address: 101 Peavey Road Chaska, Minnesota 55318	MSDS Issue Date: 8/3/07
Telephone Number For Information: 952-556-3131	MSDS Revision: B MSDS Revision Date: 11/18/10 MSDS Number: NA
Product: Luminousgard® Alkali and Acid Treated Activated Carbon	Product Number(s): LPDNACRR2, LPDF10RR4, LPDF20RR4, LPDF20SS4, SI3M112Y05, S4503M037Y06
Substance Identification: Stainless steel housing containing both alkali and acid treated activated carbons, separated within housing by a stainless steel screen mesh.	

Section II – COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS NO.	Percent
Alkali Component		
Activated Carbon	7440-44-0	96.0 – 100
Potassium Carbonate	584-08-7	0 - 4.0
Acid Component		
Activated Carbon	7440-44-0	75 - 80
Phosphoric Acid	7664-38-2	20 - 25

Section III – HAZARD IDENTIFICATION AND EMERGENCY OVERVIEW

Alkali Treated Carbon Component
Emergency Overview: Caution! Activated carbon affects the respiratory and cardiovascular systems. Potassium carbonate causes irritation to skin, eyes and respiratory tracts. May be harmful if swallowed.
Note that the hazardous media is contained within a stainless steel housing and exposure is unlikely to occur under normal conditions.
Route(s) of Entry:
Inhalation: Not expected to occur during normal use. Contact with media may cause irritation to respiratory tract.
Skin absorption: Not expected to occur during normal use. Contact with media may cause irritation.
Eye Contact: Not likely to occur during normal use. Contact with media may cause irritation, redness, pain and possibly corneal damage.

Ingestion: Not likely to occur during normal use. Contact with media may cause irritation of gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea
Health Hazards (Acute and Chronic): Unlikely to occur during normal use. Prolonged inhalation of media may cause pulmonary disorders. Prolonged skin contact may cause chronic dermatitis.
Medical Conditions Generally Aggravated by Exposure: No information found.
Acid Treated Carbon Component:
Emergency Overview: Caution! Activated carbon affects the respiratory and cardiovascular systems. Phosphoric acid causes irritation and burns to every area of contact. May be harmful if swallowed or inhaled.
Note: The hazardous media is contained within a stainless steel housing and exposure is unlikely to occur under normal conditions.
Route(s) of Entry:
Inhalation: Not expected to occur during normal use. Contact with media may cause irritation to nose, throat and respiratory tract. Corrosive.
Skin absorption: Not expected to occur during normal use. Contact with media may cause redness, pain and skin burns. Corrosive.
Eye Contact: Not likely to occur during normal use. Contact with media may cause redness, pain, blurred vision, eye burns, and permanent eye damage. Corrosive.
Ingestion: Not likely to occur during normal use. Contact with media may cause irritation of gastrointestinal tract. Symptoms may include sore throat, abdominal pain, nausea, vomiting and burns to mouth, throat and stomach. Corrosive.
Health Hazards (Acute and Chronic): Unlikely to occur during normal use. Prolonged inhalation of media may cause pulmonary disorders.
Medical Conditions Generally Aggravated by Exposure: No information found.

Section IV – FIRST AID

Eyes: Not likely to occur due to design of product. If media is exposed to eyes, wash eyes immediately with large amounts of water for a minimum of 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Consult a physician for medical treatment, if necessary.
Skin: Not likely to occur due to design of product. If media is exposed to skin, wash material off skin with soap or mild detergent and water. If redness, itching or burning sensation develops consult a physician for medical treatment.
Ingestion: Not likely to occur due to design of product. If large amount of media is ingested, give several glasses of water. Consult a physician for medical treatment.
Inhalation: Not likely to occur due to design of product. If media is inhaled, remove to fresh air. Get medical attention for any breathing difficulty.

Section V – FIRE FIGHTING MEASURES

Flash Point (Method Used): NA	Flammable Limits	LEL: NA	UEL: NA
Extinguishing Media: Water spray, dry chemical, alcohol foam or carbon dioxide.			
Fire and Explosion Hazards: As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Activated carbon is difficult to ignite and tends to burn slowly (smolder) without producing smoke or flame. Wet activated carbon depletes oxygen from the air. Materials allowed to smolder for long periods of time in enclosed spaces may produce amounts of carbon monoxide which may reach the lower explosive limit for carbon monoxide of 12.5% in air. Contact with strong oxidizers such as ozone or liquid oxygen may cause rapid combustion.			
Special Fire Fighting Instructions/Precautions: Fire fighters should wear full protective clothing and NIOSH approved self contained breathing apparatus with full facepiece while extinguishing a fire.			

Section VI – ACCIDENTAL RELEASE MEASURES

Steps to Be Taken in Case Material is Released or Spilled: Not likely to occur due to the design of the product. If mixture is released, remove all ignition sources, ventilate area, wear appropriate personal protective equipment, and clean up in a manner that does not disperse dust into the air. Place in proper closed container for disposal.
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Section VII – HANDLING AND STORAGE

Handling: End caps should remain on product until the product is ready to be used. Exposure to media is not likely to occur under normal use due to design of product. Should media be released from housing, wear protective gloves and safety glasses when cleaning spilled materials. Wash thoroughly after handling.
Storage: Store in a cool dry place. Protect against physical damage.

Section VIII – PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROL

Ingredient:	OSHA – PEL	ACGIH – TLV
Particulates	15 mg/m ³ (Total Dust) 5 mg/m ³ (Respirable)	10 mg/m ³ (Inhalable Fraction) 3 mg/m ³ (Respirable)
Potassium carbonate	None established	None established
Phosphoric Acid	1 mg/m ³	1 mg/m ³ , 3 mg/m ³ (STEL)
Ventilation: Due to the design of the product, not required under normal use conditions. If necessary, provide local exhaust ventilation at processing equipment to keep particulates below OSHA and ACGIH levels.		
Respiratory Protection: Due to the design of the product, not required under normal use conditions. If necessary, use NIOSH approved respirators for the hazard present. With properly designed ventilation, use of respiratory protection should not be necessary.		
Personal Protection: Not required under normal use conditions. If necessary: Hand: Wear corrosive resistant glove. Eyes: Wear safety goggles. Skin and body: Protect skin and body with corrosive resistant equipment. Additional Protective Measures: After handling materials, employees should wash their hands and face before eating, drinking, or using tobacco products.		

Section IX – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	Sublimes	Specific Gravity (H2O = 1)	1.8 – 2.1
Vapor Pressure (mm Hg.)	Not available	Nominal Melting Temperature (°C)	Not available
Vapor Density (AIR = 1)	0.4	Evaporation Rate (Butyl Acetate = 1)	Not available
Autoignition Temperature	Not available	Decomposition Temperature	Not available
Solubility in Water	Insoluble	pH (Alkali Component) pH (Acid Component)	7.0 to 11.6 s.u. 1.5 to 7.0 s.u.
Appearance and Odor: Media is odorless black powder.			

Section X – STABILITY AND REACTIVITY

Stability: Stable under normal storage, handling and processing conditions
Incompatibility (Materials to Avoid): Alkali Treated Carbon Component: Strong oxidizing agents such as ozone, liquid oxygen, chlorine, permanganate, etc. may result in rapid combustion of media. Avoid contact with liquid strong acids. Acid Treated Carbon Component: The following information applies to the phosphoric acid component of the media: Can liberate explosive hydrogen gas when reacting with chlorides. Can react violently with sodium tetrahydroborate. Exothermic reactions with aldehydes, amines, amides, alcohols and glycols, azo-compounds, carbamates, esters, caustics, phenols and cresols, ketones, organophosphates, epoxides, combustible materials, unsaturated halides, and organic peroxides. It also forms flammable gases with sulfides, mercaptans, cyanides and aldehydes. It also forms toxic fumes with cyanides, sulfides, fluorides, organic peroxides, and halogenated organics. Mixtures with nitromethane are explosive.
Hazardous Decomposition or Byproducts: Alkali Treated Carbon Component: When involved in a fire, carbon dioxide and carbon monoxide are generated. Acid Treated Carbon Component: Phosphoric oxides may form when heated to decomposition.
Hazardous Polymerization/Reactions: Will not occur.
Conditions to Avoid: Moisture and incompatibles.

Section XI – TOXICOLOGICAL INFORMATION

Toxicological data: Potassium carbonate: Oral rat LD50 180 mg/kg. Phosphoric acid: Oral rat LD50 1530 mg/kg.
Carcinogenicity: Ingredients are not listed as carcinogens by IARC, NIOSH, NTP or OSHA.

Section XII – ECOLOGICAL INFORMATION

Do not allow media to be released to the environment without proper governmental permits.

Media must not be released to the environment since it can be consumed by animal and aquatic species.

Section XIII – DISPOSAL INFORMATION

Prior to use, the acid treated carbon within the stainless steel housing is considered a corrosive solid Hazardous Waste under RCRA (40 CFR 261). The user must evaluate the post-use characteristics of the product to determine the used product applicability under RCRA (40 CFR 261). Dispose of used material in accordance with federal, state and local environmental regulations.

Section XIV – TRANSPORTATION INFORMATION

Transportation and Hazardous Materials Description:

US DOT and IATA:

Proper Shipping Name: Phosphoric Acid, Solid

Hazard Class: 8

UN/NA: UN3453

Packing Group: III

Quantity of Phosphoric Acid, Solid per device:

LPDNACRR2 contains 25 g

LPDF10RR4 contains 165 g

LPDF20RR4 contains 350 g

LPDF20SS4 contains 350 g

SI3M112Y05 contains 13 g

S4503M037Y06 contains 0.03 g (each unit)

Section XV – REGULATORY INFORMATION

OSHA Status: This product is not regulated by 29 CFR 1910.1000 Subpart Z

CERCLA Reportable Quantities (Both Alkali and Acid Treated Carbon Components):

SARA Title III:

Section 302 Extremely Hazardous Substances: Not listed

Section 311/312: Acute: Yes

Chronic: No

Fire: No

Pressure: No

Reactivity: No

Section 313: Not listed

US EPA CERCLA Hazardous Substances (40 CFR 302): Phosphoric acid is listed at 5000 lbs.

TSCA: All ingredients are on the TSCA Chemical Substance Inventory

US EPA RCRA (40 CFR 261): If discarded in the purchased form, the acid treated carbon within the stainless steel housing would be a regulated hazardous waste by characteristic (i.e., corrosively). However, under RCRA, it is the responsibility of the user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

California Proposition 65: Not listed

Section XVI – ADDITIONAL INFORMATION

The chemical, physical and toxicological properties of this material have not been thoroughly investigated. Exercise due care.

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