

# High-temp Orbit injectable packing

**Horizon HGP 22** is an injectable packing comprised of graphite pellets that are designed for Orbit® valves in general service applications up to 600°



## *Specs and Services:*

**Temperature Range....** -50° + 600°

**Color.....** Black pellets

Use in hydrocarbons, nitrogen, hydrogen, hydrogen sulfide, and carbon dioxide.

<i>Item #</i>	<i>Size</i>	<i>Quantity</i>
HLHGP22-HP	1/2 pint can	1 can
HLHGP22-P	Pint can	1 can



9372 State Hwy 99 — Hominy, Oklahoma 74035— PO Box 650 — Hominy, Oklahoma 74035-0650

Tel. (918) 885-4395 — Toll Free (866) 202-2478 — Fax (918) 885-6013

[www.horizonvalve.com](http://www.horizonvalve.com)

**1. Product and Company Identification**

<b>Material name</b>	<b>GRAFOIL® Injectable Packing Containing Oil</b>
<b>Version #</b>	03
<b>Issue date</b>	07-25-2012
<b>Revision date</b>	09-26-2012
<b>Supersedes date</b>	09-13-2012
<b>CAS #</b>	Mixture
<b>MSDS Number</b>	0017
<b>Product use</b>	Thermal interface.
<b>Manufacturer information</b>	
<b>Manufacturer/Supplier</b>	GrafTech International Holdings Inc. 12900 Snow Road Parma, Ohio 44130 +1 216-676-2000
<b>Contact person</b>	Dave Mieskowski +1 216-676-2304
<b>E-mail</b>	Dave.Mieskowski@graftech.com
<b>Emergency number</b>	For Chemical Emergency ONLY, call CHEMTREC at: +1-800-424-9300 or +1-703-527-3887

**2. Hazards Identification**

<b>Physical state</b>	Solid.
<b>Appearance</b>	Black paste.
<b>Emergency overview</b>	In its manufactured and shipped state, this product is considered to present low hazard. Processing may generate hazardous fumes and dusts.
<b>OSHA regulatory status</b>	Under some use conditions, this material may be considered to be hazardous in accordance with OSHA 29 CFR 1910.1200.
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Eye contact. Skin contact. Inhalation.
<b>Eyes</b>	Dust in the eyes will cause irritation.
<b>Skin</b>	Dust may irritate skin. Prolonged skin contact may cause redness, irritation and dry skin. May cause eczema-like skin disorders (dermatitis).
<b>Inhalation</b>	Dust and fumes generated from the material can enter the body by inhalation. High concentrations of dust and fumes may irritate the throat and respiratory system and cause coughing. Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases. Prolonged and repeated overexposure to dust can lead to pneumoconiosis. Repeated exposure to high concentrations of dust may adversely affect the lungs and increase the risks of developing respiratory cancer.
<b>Ingestion</b>	Ingestion of dusts generated during working operations may cause nausea and vomiting.
<b>Target organs</b>	Skin. Respiratory tract. Lung. Eyes.
<b>Chronic effects</b>	Danger of adverse health effects by prolonged exposure. Crystalline silica has been classified by IARC, NTP and ACGIH as a known human carcinogen and suspected human carcinogen respectively. Prolonged breathing of high levels of crystalline silica can cause silicosis. Also, airborne crystalline silica is possibly carcinogenic to humans. Pre-existing pulmonary disorders, such as emphysema, may possibly be aggravated by prolonged exposure to high concentrations of graphite and/or crystalline silica dusts. Prolonged and repeated overexposure to dust can lead to pneumoconiosis.
<b>Signs and symptoms</b>	Eye contact: Exposed individuals may experience eye tearing, redness, and discomfort. Skin contact: Prolonged skin contact may cause redness, irritation and dry skin.
<b>Potential environmental effects</b>	The product is not expected to be hazardous to the environment.

### 3. Composition / Information on Ingredients

Components	CAS #	Percent
Graphite	7782-42-5	> 85
Crystalline silica (quartz)	14808-60-7	< 0.8

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First Aid Measures

#### First aid procedures

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids wide apart. Do not rub eye. Get medical attention.

**Skin contact** Remove contaminated clothing. Wash contact areas with soap and water. Get medical attention promptly if symptoms persist or occur after washing.

**Inhalation** Move injured person into fresh air and keep person calm under observation. For breathing difficulties, oxygen may be necessary. Get medical attention.

**Ingestion** Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort continues.

**Notes to physician** Treat symptomatically.

### 5. Fire Fighting Measures

**Flammable properties** Bulk material is non-combustible. The material may form dust and can accumulate electrostatic charges, which may cause an electrical spark (ignition source).

#### Extinguishing media

**Suitable extinguishing media** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Unsuitable extinguishing media** None.

#### Protection of firefighters

**Protective equipment and precautions for firefighters** Use standard firefighting procedures and consider the hazards of other involved materials. Caution should be exercised when using water or foam as frothing may occur, especially if directed onto containers of hot or burning material. Cool material exposed to heat with water spray and remove it if no risk is involved.

**Fire fighting equipment/instructions** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials. Caution should be exercised when using water or foam as frothing may occur, especially if directed onto containers of hot or burning material.

**Hazardous combustion products** Carbon oxides. Unidentified organic compounds.

### 6. Accidental Release Measures

**Personal precautions** Avoid generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing and gloves. See Section 8 of the MSDS for Personal Protective Equipment.

**Environmental precautions** Do not allow material to enter storm or sanitary sewers, groundwater or soil.

**Methods for cleaning up** Collect dust using a vacuum cleaner equipped with HEPA filter. If not possible, gently moisten dust with water fog before it is collected with shovel, broom or the like. Collect in approved containers and seal securely. Containers must be labeled. For waste disposal, see section 13 of the MSDS.

### 7. Handling and Storage

**Handling** Use work methods which minimize dust production. If dust or fumes are generated during use, use local exhaust in combination with general ventilation as necessary to remove fumes/dust from the workers' breathing zone and to ensure exposures do not exceed applicable limits. Care should be taken to seal electrical circuits and switches that may be affected. Dusts should not be emitted to the atmosphere where they may settle on and cause shorting of outside electrical equipment. Do not breathe fumes and dusts. Avoid contact with skin and eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.



**Storage**

Keep away from heat, spark, open flames and other sources of ignition. Store away from incompatible materials.

**8. Exposure Controls / Personal Protection****Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Crystalline silica (quartz) (CAS 14808-60-7)	TWA	0.025 mg/m <sup>3</sup>	Respirable fraction.
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	Respirable fraction.

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	PEL	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

Components	Type	Value	Form
Crystalline silica (quartz) (CAS 14808-60-7)	TWA	0.3 mg/m <sup>3</sup>	Total dust.
		0.1 mg/m <sup>3</sup>	Respirable.
Graphite (CAS 7782-42-5)	TWA	2.4 mppcf	Respirable.
		15 mppcf	

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

Components	Type	Value	Form
Crystalline silica (quartz) (CAS 14808-60-7)	TWA	0.025 mg/m <sup>3</sup>	Respirable particles.
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	Respirable.

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

Components	Type	Value	Form
Crystalline silica (quartz) (CAS 14808-60-7)	TWA	0.025 mg/m <sup>3</sup>	Respirable fraction.
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	Respirable.

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value	Form
Crystalline silica (quartz) (CAS 14808-60-7)	TWA	0.1 mg/m <sup>3</sup>	Respirable.
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	Respirable fraction.

**Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

Components	Type	Value	Form
Crystalline silica (quartz) (CAS 14808-60-7)	TWA	0.1 mg/m <sup>3</sup>	Respirable dust.
Graphite (CAS 7782-42-5)	TWA	2 mg/m <sup>3</sup>	Respirable dust.

**Mexico. Occupational Exposure Limit Values**

Components	Type	Value
Crystalline silica (quartz) (CAS 14808-60-7)	TWA	0.1 mg/m <sup>3</sup>
Graphite (CAS 7782-42-5)	TWA	10 mg/m <sup>3</sup>

**Engineering controls**

Provide adequate general and local exhaust ventilation. Mechanical ventilation or local exhaust ventilation is required. Provide explosion-proof ventilation for high dust concentrations. Observe occupational exposure limits and minimize the risk of inhalation of dust and fumes. Provide access to washing facilities including soap, skin cleanser and fatty cream.

**Personal protective equipment****Eye / face protection**

Wear safety glasses with side shields (or goggles).

<b>Skin protection</b>	Wear suitable protective gloves to prevent cuts and abrasions. Suitable gloves can be recommended by the glove supplier. Wear appropriate clothing to prevent repeated or prolonged skin contact.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Use a NIOSH-approved respirator if there is a potential for exposure to dust exceeding exposure limits (See 29 CFR 1910.134, respiratory protection standard). Seek advice from supervisor on the company's respiratory protection standards.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical & Chemical Properties

<b>Appearance</b>	Black paste.
<b>Physical state</b>	Solid.
<b>Form</b>	Paste.
<b>Color</b>	Black.
<b>Odor</b>	Slight hydrocarbon.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Boiling point</b>	Not applicable.
<b>Melting point/Freezing point</b>	> 5000 °F (> 2760 °C)
<b>Solubility (water)</b>	Insoluble.
<b>Specific gravity</b>	0.3 - 1.8
<b>Flash point</b>	410 °F (210 °C)
<b>Flammability limits in air, upper, % by volume</b>	7
<b>Flammability limits in air, lower, % by volume</b>	0.6
<b>Auto-ignition temperature</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable. No data available.

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	Dust is combustible, avoid sources of ignition and strong oxidizing agents. This product should not be used in oxidizing atmosphere.
<b>Incompatible materials</b>	Strong oxidizing agents. Strong reducing agents.
<b>Hazardous decomposition products</b>	Carbon oxides. Unidentified organic compounds.
<b>Possibility of hazardous reactions</b>	Will not occur.

## 11. Toxicological Information

<b>Sensitization</b>	May cause eczema-like skin disorders (dermatitis).
<b>Acute effects</b>	No data available for this product.
<b>Local effects</b>	Dust may irritate the eyes. Dust may irritate skin. High concentrations of dust may irritate throat and respiratory system and cause coughing.

**Chronic effects** Repeated exposure to high concentrations of dust may adversely affect the lungs and increase the risks of developing respiratory cancer. Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases. Pre-existing pulmonary disorders, such as emphysema, may possibly be aggravated by prolonged exposure to high concentrations of graphite and/or crystalline silica dusts. Prolonged and repeated overexposure to dust can lead to pneumoconiosis.

#### **Carcinogenicity**

##### **ACGIH Carcinogens**

Crystalline silica (quartz) (CAS 14808-60-7) A2 Suspected human carcinogen.

##### **IARC Monographs. Overall Evaluation of Carcinogenicity**

Crystalline silica (quartz) (CAS 14808-60-7) 1 Carcinogenic to humans.

##### **US NTP Report on Carcinogens: Known carcinogen**

Crystalline silica (quartz) (CAS 14808-60-7) Known To Be Human Carcinogen.

**Mutagenicity** No data available.

**Reproductive effects** No data available.

**Symptoms and target organs** Eye contact: Exposed individuals may experience eye tearing, redness, and discomfort. Skin contact: Prolonged skin contact may cause redness, irritation and dry skin.

**Further information** Pre-existing pulmonary disorders, such as emphysema, may possibly be aggravated by prolonged exposure to high concentrations of graphite and/or crystalline silica dusts. Prolonged and repeated overexposure to dust can lead to pneumoconiosis. Crystalline silica: Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, which is a progressive and irreversible lung disease.

## **12. Ecological Information**

**Ecotoxicity** The product is not expected to be hazardous to the environment.

**Persistence and degradability** The degradability of the product has not been stated.

**Bioaccumulation / Accumulation** No data available on bioaccumulation.

**Partition coefficient** Not applicable.

**Mobility in environmental media** Not relevant, due to the form of the product.

## **13. Disposal Considerations**

**Waste codes** Not regulated.

**Disposal instructions** Dispose of waste and residues in accordance with local authority requirements. Waste must be kept in sealed and labeled containers. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Recover and reclaim or recycle, if practical.

**Waste from residues / unused products** Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**Contaminated packaging** Dispose product packaging in accordance with local authority requirements taking into account characteristics of the packaging material.

## **14. Transport Information**

#### **DOT**

Not regulated as a hazardous material by DOT.

#### **IATA**

Not regulated as dangerous goods.

#### **IMDG**

Not regulated as dangerous goods.

#### **TDG**

Not regulated as dangerous goods.

## **15. Regulatory Information**

**US federal regulations** Under some use conditions, this material may be considered to be hazardous in accordance with OSHA 29 CFR 1910.1200.

#### **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

## Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

### CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**  
Immediate Hazard - Yes  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 302 extremely hazardous substance (40 CFR 355, Appendix A)**  
No

**Section 311/312 (40 CFR 370)**  
Yes

**Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)**  
Not controlled

**Canadian regulations**  
This is not a WHMIS controlled product.

**WHMIS status**  
Non-controlled

### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

**State regulations**  
This product contains chemicals known to the state of California to cause birth defects or other reproductive harm.

#### US - California Hazardous Substances (Director's): Listed substance

Graphite (CAS 7782-42-5) Listed.

#### US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline silica (quartz) (CAS 14808-60-7) Listed.

#### US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Crystalline silica (quartz) (CAS 14808-60-7) Listed: October 1, 1988 Carcinogenic.

#### US - New Jersey RTK - Substances: Listed substance

Crystalline silica (quartz) (CAS 14808-60-7) Listed.

Graphite (CAS 7782-42-5) Listed.

#### US. Massachusetts RTK - Substance List

Crystalline silica (quartz) (CAS 14808-60-7) Listed.

Graphite (CAS 7782-42-5) Listed.

#### US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

#### US. Pennsylvania RTK - Hazardous Substances

Crystalline silica (quartz) (CAS 14808-60-7) Listed.

Graphite (CAS 7782-42-5) Listed.

**Mexico regulations**

Under some use conditions, this material may be considered to be hazardous in accordance with Mexican regulations.

**16. Other Information****Further information**

HMIS® is a registered trade and service mark of the NPCA.  
F - Safety Glasses, Gloves, Apron, Dust Respirator

This safety data sheet contains revisions in the following section(s): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.

Grades: TG-050, TG-051.

**HMIS® ratings**

Health: 1\*  
Flammability: 1  
Physical hazard: 0  
Personal protection: F

**NFPA ratings**

Health: 1  
Flammability: 1  
Instability: 0

**Disclaimer**

GRAFTECH INTERNATIONAL HOLDINGS INC. ADVISES THE USERS OF THIS PRODUCT TO STUDY THIS MATERIAL SAFETY DATA SHEET (MSDS). AND BECOME AWARE OF PRODUCT HAZARDS AND SAFETY INFORMATION. TO PROMOTE SAFE USE OF THIS PRODUCT, USERS SHOULD NOTIFY THEIR EMPLOYEES, AGENTS AND CONTRACTORS OF THE INFORMATION ON THIS MSDS AND ANY PRODUCT HAZARDS AND SAFETY INFORMATION.

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.