

# MATERIAL SAFETY DATA SHEET

E-PAK™ C-941, 943, 944, 946, 947, 948

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations



Graver Technologies

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **E-PAK™ C-941, 943, 944, 946, 947, 948**  
CAS NUMBER: Mixture  
PRODUCT USE: Precious metal catalyst removal in pharmaceutical syntheses.  
U.N. NUMBER: Not Applicable  
U.N. DANGEROUS GOODS CLASS: Non-Regulated Material  
SUPPLIER/MANUFACTURER'S NAME: **Graver Technologies LLC**  
ADDRESS: 200 Lake Drive, Glasgow, Delaware 19702-3319 USA  
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DATE OF PREPARATION: December 8, 2012  
DATE OF LAST REVISION: October 8, 2011

## SECTION 2 - HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** This product is a solid black block with no odor. Exposure can be irritating to eyes, respiratory system and skin. It is a non-flammable solid. The Environmental effects of this product have not been investigated, however this product is not expected to have any adverse effects.

US DOT SYMBOLS

CANADA (WHMIS) SYMBOLS

EUROPEAN and (GHS) Hazard Symbols

Non-Regulated

Not Controlled



Signal Word: **Caution!**

### EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1

EC# 231-153-3 This substance is not classified in the Annex I of Directive 67/548/EEC

CAS# 9002-88-4 is a polymer and exempt from listing

EC# 231-545-4 This substance is not classified in the Annex I of Directive 67/548/EEC

#### GHS Hazard Classification(s):

None

#### Hazard Statement(s):

H315: Causes skin irritation

H320: Causes eye irritation

#### Precautionary Statement(s):

P260: Do not breath dust/fume/gas/mist/vapors/spray

P264: Wash hands thoroughly after handling

P271: Use only in well ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

#### Hazard Symbol(s):

[Xi] Irritant

#### Risk Phrases:

R36/37/38: Irritating to eyes, respiratory system and skin

#### Safety Phrases:

S9: Keep container in a well ventilated area

S22: Do not breath dust

S24/25: Avoid contact with skin and eyes

### HEALTH HAZARDS OR RISKS FROM EXPOSURE:

**ACUTE:** Exposure can be irritating to eyes, respiratory system and skin.

**INHALATION:** Inhalation of dusts may cause nose, throat and respiratory tract irritation.

**EYE:** May cause mechanical irritation with pain and redness.

**SKIN:** May cause irritation. Prolonged skin contact may produce drying and redness.

**INGESTION:** Product is considered practically non-toxic if swallowed.

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CHRONIC: None Known

TARGET ORGANS: ACUTE: Eye, Respiratory System, Skin CHRONIC: None Known

## SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Carbon, Activated	7440-44-0	231-153-3	Not Listed	60 - 80%	HAZARD CLASSIFICATION: None RISK PHRASES: None
PE-UHMW	9002-88-4	Polymer Exempt	Not Listed	25 - 40%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Silica Flow Aid	7631-86-9	231-545-4	Not Listed	0.5 - 1.5	HAZARD CLASSIFICATION: None RISK PHRASES: None
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

**NOTE:** ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard *JIS Z 7250: 2000*.

## SECTION 4 - FIRST-AID MEASURES

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with contaminated individual.

**EYE CONTACT:** If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation persists.

**SKIN CONTACT:** Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder before re-use.

**INHALATION:** If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.

**INGESTION:** If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Pre-existing skin, respiratory system or eye problems may be aggravated by prolonged contact.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and reduce over-exposure.

## SECTION 5 - FIRE-FIGHTING MEASURES

**FLASH POINT:**

Non-Flammable

**AUTOIGNITION TEMPERATURE:**

Not Applicable

**FLAMMABLE LIMITS (in air by volume, %):**

Lower (LEL): NA Upper (UEL): NA

**FIRE EXTINGUISHING MATERIALS:**

As appropriate for surrounding fire. Carbon dioxide, foam, dry chemical, halon, or water spray. Do not release runoff from fire control methods to sewers or waterways.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Product is solid and dust free. Clean up any powdery material immediately. High dust concentration may form explosive mixtures with air, which can be ignited by spark or flame. Dusts may accumulate a static discharge.

Explosion Sensitivity to Mechanical Impact:

Not Sensitive.

Explosion Sensitivity to Static Discharge:

Sensitive (Air/Dust mixtures)

Minimum Ignition Energy (M.I.E.):

Not Available at this time

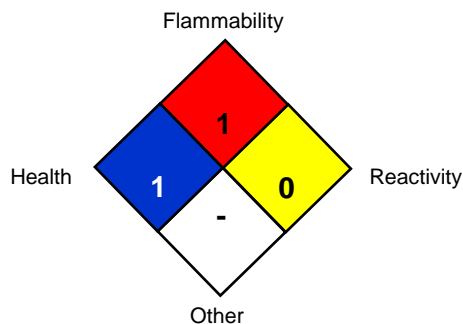
**SPECIAL FIRE-FIGHTING PROCEDURES:**

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

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## NFPA RATING SYSTEM



## HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD (BLUE)			1
FLAMMABILITY HAZARD (RED)			1
PHYSICAL HAZARD (YELLOW)			0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \* = Chronic hazard

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

**SPILL AND LEAK RESPONSE:** Personnel should be trained for spill response operations.

**SPILLS:** If the block breaks, it may generate dust. Pick up, sweep, shovel or vacuum (HEPA vacuum) spilled material and place in an appropriate container for re-use or disposal. Avoid dust generation if possible. Wet material may be slippery. For large spills, use wet methods and dike far ahead of any liquid spill. Do not release into sewers or waterways. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

## SECTION 7 - HANDLING and STORAGE

**WORK PRACTICES AND HYGIENE PRACTICES:** As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dusts generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately. Do not enter places where bulk material is used or stored until adequately ventilated to prevent asphyxiation. As with all finely divided materials, precautions should be taken to avoid inhalation and eye contact. Ground all transfer, blending and dust collecting equipment to prevent static discharge in accordance with NFPA 70, "National Electric Code;" NFPA 499, "Recommended Practice for the Classification of Combustible Dusts and of Hazardous (classified) Locations for Electrical Installations in Chemical Process Areas;" NFPA 654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids" and OSHA Combustible Dust standards. Remove all ignition sources from material handling, transfer and processing areas where dust may be present.

**STORAGE AND HANDLING PRACTICES:** Containers of this product must be properly labeled. Store containers in a cool, dry location away from heat, flame and incompatible materials. Keep container tightly closed when not in use.

## SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

### EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA
Carbon, Activated	7440-44-0	10 mg/m <sup>3</sup> Dust	15 mg/m <sup>3</sup> Total Dust
PE-UHMW	9002-88-4	10 mg/m <sup>3</sup> Dust	15 mg/m <sup>3</sup> Total Dust
Silica Flow Aid	7631-86-9	10 mg/m <sup>3</sup>	6 mg/m <sup>3</sup> Total

Currently, International exposure limits are established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

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**VENTILATION AND ENGINEERING CONTROLS:** Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below. Use local exhaust ventilation to control airborne dust. Ensure eyewash/safety shower stations are available near areas where this product is used.

*The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.*

**RESPIRATORY PROTECTION:** Maintain airborne contaminant concentrations below guidelines listed above, if applicable.

If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**EYE PROTECTION:** Safety glasses are recommended. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

**HAND PROTECTION:** Use protective gloves to minimize skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

**BODY PROTECTION:** Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

## SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

<b>PHYSICAL STATE:</b>	Solid block
<b>APPEARANCE &amp; ODOR:</b>	Black solid block with no odor.
<b>ODOR THRESHOLD (PPM):</b>	Not Available
<b>VAPOR PRESSURE (mmHg):</b>	Not Applicable
<b>VAPOR DENSITY (AIR=1):</b>	Not Applicable.
<b>PACKING DENSITY:</b>	Not Applicable
<b>EVAPORATION RATE (nBuAc = 1):</b>	Not Applicable.
<b>BOILING POINT (C°):</b>	Not Applicable
<b>FREEZING POINT (C°):</b>	Not Applicable
<b>pH:</b>	Not Applicable
<b>SPECIFIC GRAVITY 4°C: (Water = 1)</b>	<1
<b>SOLUBILITY IN WATER (%)</b>	Insoluble
<b>VOC:</b>	0

## SECTION 10 - STABILITY and REACTIVITY

**STABILITY:** Product is stable

**DECOMPOSITION PRODUCTS:** Thermal decomposition (burning) may produce irritating and toxic fumes of carbon (carbon dioxide, carbon monoxide), formaldehyde, ethylene and acrylic acid. The exact chemicals formed depends on many factors including temperature and heating rate.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** Avoid contact with strong oxidizing agents such as ozone, chlorine, permanganate, sulfuric acid and nitric acid.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**CONDITIONS TO AVOID:** Contact with incompatible materials and dust generation.

## SECTION 11 - TOXICOLOGICAL INFORMATION

**TOXICITY DATA:** There is no available data for the product, only for the ingredients

CAS# 7440-44-0 LC50, Inhalation - Rat	>64,400 mg/m <sup>3</sup>
CAS# 7440-44-0 LD50, Oral - Rat	>10,000 mg/kg
CAS# 9002-88-4 Ldlo, Oral - Mouse	5,000 mg/kg
CAS# 7631-86-9 LD50, Oral - Rat	>10,000 mg/kg

**SUSPECTED CANCER AGENT:** None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

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**IRRITANCY OF PRODUCT:** Contact with this product can be irritating to exposed skin, eyes and respiratory system.

**SENSITIZATION OF PRODUCT:** This product is not considered a sensitizer.

**REPRODUCTIVE TOXICITY INFORMATION:** No information concerning the effects of this product and its components on the human reproductive system.

## SECTION 12 - ECOLOGICAL INFORMATION

**ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.**

**ENVIRONMENTAL STABILITY:** The ecological characteristics of this product have not been fully investigated, however, the ecotoxicity is expected to be minimal. The product should not be discharged unmonitored into the environment.

**EFFECT OF MATERIAL ON PLANTS or ANIMALS:** No evidence is currently available on this product's effects on plants or animals.

**EFFECT OF CHEMICAL ON AQUATIC LIFE:** No Data Available for this product at this time.

## SECTION 13 - DISPOSAL CONSIDERATIONS

**PREPARING WASTES FOR DISPOSAL:** Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

## SECTION 14 - TRANSPORTATION INFORMATION

**US DOT; IATA; IMO; ADR:**

**THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.**

**PROPER SHIPPING NAME:** Non-Regulated Material

**HAZARD CLASS NUMBER and DESCRIPTION:** Not Applicable

**UN IDENTIFICATION NUMBER:** Not Applicable

**PACKING GROUP:** Not Applicable.

**DOT LABEL(S) REQUIRED:** Not Applicable

**NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004):** Not Applicable

**MARINE POLLUTANT:** None of the ingredients are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

This product is NOT considered spontaneously combustible under the "Self-Heating Test for Carbon" protocol listed in the United Nations' Manual of Tests and Criteria [33.3.1].

**U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS:**

This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

**TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:**

This product is not classified as Dangerous Goods, per regulations of Transport Canada.

**INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):**

This product is not classified as Dangerous Goods, by rules of IATA:

**INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:**

This product is not classified as Dangerous Goods by the International Maritime Organization.

**EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):**

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

## SECTION 15 - REGULATORY INFORMATION

**UNITED STATES REGULATIONS**

**SARA REPORTING REQUIREMENTS:** This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows: None

**TSCA:** All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

**SARA 311/312:**

Acute Health: Yes      Chronic Health: No      Fire: Yes      Reactivity: No

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**U.S. SARA THRESHOLD PLANNING QUANTITY:** There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

**U.S. CERCLA REPORTABLE QUANTITY (RQ):**

CERCLA Reportable Quantity (RQ), None.

**CLEAN WATER ACT:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

**STATE REGULATIONS:**

None.

**CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):** None of the ingredients are on the California Proposition 65 lists.

**CANADIAN REGULATIONS:**

**CANADIAN DSL/NDL INVENTORY STATUS:**All of the components of this product are on the DSL Inventory

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:** No component of this product is on the CEPA First Priorities Substance Lists.

**CANADIAN WHMIS CLASSIFICATION and SYMBOLS:** This product is categorized as a Not Controlled Product, as per the Controlled Product Regulations

**EUROPEAN ECONOMIC COMMUNITY INFORMATION:**

**EU LABELING AND CLASSIFICATION:**

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

**AUSTRALIAN INFORMATION FOR PRODUCT:**

**AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS:** All components of this product are listed on the AICS.

**STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS:** Not applicable.

**JAPANESE INFORMATION FOR PRODUCT:**

**JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS:** The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

**INTERNATIONAL CHEMICAL INVENTORIES:**

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftliste List of Toxic Substances:	Listed
U.S. TSCA:	Listed

## SECTION 16 - OTHER INFORMATION

**PREPARED BY:** Paul Eigbrett MSDS Authoring PLUS

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