EP-250-3; EP-250-12; EP-250-14; EP-250-3X; EP-250-1XX; EP-250-20X; EP-250-22; EP-250-22-120M; EP-250-22-80M; EP-250-23 Igniters

Safety Data Sheet

Document Number EHS-SDS-3007

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

Date of Issue: 07/01/2024 Rev: Orig

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: EP-250-3; EP-250-12; EP-250-14; EP-250-3X; EP-250-1XX; EP-250-20X; EP-250-22; EP-250-22-120M; EP-250-22-80M; EP-250-23 Igniters

1.2. Intended Use of the Product

Control of pyrotechnic reactions

1.3. Name, Address, and Telephone of the Responsible Party

Company

EaglePicher Technologies, LLC
1215 W C St.
Joplin MO 64801
United States of America
+1 417 623 8000
email: inquiry@eaglepicher.com Website: www.eaglepicher.com

1.4. Emergency Telephone Number

Emergency Number : For Chemical Emergency Call CHEMTREC day or night
Within USA and Canada: 1.800.424.9300
Outside USA and Canada: 1.703.527.3887 (collect calls accepted)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US/CA Classification

The explosive classification below only applies to US 29 CFR 1910.1200 (HCS/HazCom 2012). The explosive classification is excluded from Canada Hazardous Products Regulations (HPR, SOR/2015-17), it is regulated under the Canada Explosives Act (R.S.C., 1985, c. E-17)

Explosive Category 1.4	H204

Classification of the Substance or Mixture for exposure to internal components:

Acute toxicity (oral) Category 4	H302
Serious eye damage/eye irritation Category 2A	H319
May cause respiratory irritation	H335
Carcinogenicity Category 1A	H350
Specific target organ toxicity (repeated exposure) Category 1	H372
May cause damage to organs through prolonged or repeated exposure	H373
Hazardous to the aquatic environment – Acute Hazard Category 1	H400
Hazardous to the aquatic environment – Chronic Hazard Category 1	H410
Combustible dust	

2.2. Label Elements

GHS-US/CA Labeling

Any labeling elements (pictograms, signal word, hazard, and precautionary statements) related to explosive classifications apply to the OSHA Hazard Communication Standard (HCS, 29 CFR 1910.1200) only and are excluded from Canada's Hazardous Products Regulations (HPR, SOR/2015-17)

Hazard Pictograms (GHS-US/CA) :

GHS01 GHS07 GHS08 GHS09

Signal Word (GHS-US/CA) : Danger

Hazard Statements (GHS-US/CA) : H204 - Fire or projection hazard.
May form combustible dust concentrations in air.
H302 - Harmful if swallowed.
H319 - Causes serious eye irritation.
H335 - Specific target organ toxicity (repeated exposure) Category 1
H350 - May cause cancer (Inhalation).
H372 - Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (Inhalation).
H373 - May cause damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary Statements (GHS-US/CA) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P330 - Rinse mouth.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P391 - Collect spillage.
P405 - Store locked up.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
P250 - Do not subject to grinding/shock/friction.
P280 - Wear protective gloves, protective clothing, and eye protection.
P370+P380 - In case of fire: Evacuate area.
P372 - Explosion risk in case of fire.
P373 - DO NOT fight fire when fire reaches explosives.
P374 - Fight fire with normal precautions from a reasonable distance.
P401 - Store in accordance with local, regional, national, and international regulations.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

Supplemental Information : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Proper grounding procedures to avoid static electricity should be followed. Prevent dust accumulation (to minimize explosion hazard). Avoid generating dust.

2.3. Other Hazards

Exposure to internal contents may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Iron oxide (Fe2O3)	C.I. 77491 / C.I. Pigment Red 101 / Diiron trioxide / Ferric oxide / Iron sesquioxide /	(CAS-No.) 1309-37-1	41.13 – 50.88	Comb. Dust

	Iron(III) oxide / Red Iron Oxide / Rouge / CI 77491 / Iron trioxide / Sienna / Pigment Red 101 / Red iron oxide / Red iron oxide pigment / Iron Oxide Red / Diiron(III) trioxide / Iron oxide / Ferric oxide red / Iron oxide, red			
calcium chromate	Calcium Chrome Yellow / Chromic acid (H2CrO4), calcium salt / Chromic acid (H2CrO4), calcium salt (1:1) / Chromic acid, calcium salt (1:1)	(CAS-No.) 13765-19-0	14.42 – 26.04	Acute Tox. 4 (Oral), H302 Carc. 1A, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Potassium perchlorate	Perchloric acid, potassium salt / Perchloric acid, potassium salt (1:1) / potassium perchlorate	(CAS-No.) 7778-74-7	13.06 – 16.15	Ox. Sol. 2, H272 Eye Irrit. 2A, H319 STOT SE 3, H335 STOT RE 2, H373
Silica, amorphous, diatomaceous earth	Silica, amorphous, diatomaceous earth / Kieselguhr, soda ash, flux calcined / Diatomaceous earth, natural / Silica, amorphous, silica fume, calcined diatomaceous earth / Flux calcined diatomaceous earth / Diatomaceous earth, soda ash flux-calcined / Diatomite / Flux-calcined diatomaceous earth / Silica, amorphous, soda ash flux-calcinated / Diatomaceous earth (amorphous) / Diatomaceous earth, ignited / Silica, amorphous and synthetic, diatomaceous earth, calcined / Diatomaceous earth, calcined / Calcined diatomaceous earth / Silicon dioxide (diatomaceous earth) / Diatomaceous earth, flux-calcined	(CAS-No.) 68855-54-9	7.83 – 9.27	STOT RE 1, H372
Boron	boron	(CAS-No.) 7440-42-8	4.81 – 8.68	Comb. Dust

*The actual concentration of ingredient(s) is withheld as a trade secret in accordance with 29 CFR 1910.1200. Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage(v/v%). Full text of H-statements: see section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: Information is only applicable to product contents, and not to product as normally supplied. This information is applicable to damaged, leaking, or spilled product as contact with contents is possible under these conditions. Damaged or leaking devices may have energetic effects. . Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: For exposure to internal components: Using proper respiratory protection, immediately move the exposed person to fresh air. Encourage exposed person to cough, spit out, and blow nose to remove dust. Obtain medical attention if breathing difficulty persists.

Skin Contact: For exposure to internal components: Remove contaminated clothing. Immediately drench affected area with water for at least 15 minutes. If exposed or concerned: Get medical advice/attention.

Eye Contact: For exposure to internal components: Immediately rinse with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion: For exposure to internal components: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: None expected under normal conditions of use. Energetic effects (blast effects, heat, noise, and shrapnel) from functioning of the product can cause serious physical injuries. For exposure to internal components: Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation). May cause cancer by inhalation. May cause cancer. Causes damage to organs through prolonged or repeated exposure. Causes serious eye irritation. Harmful if swallowed. Health effects from silica exposures include: silicosis, a disabling, non-reversible and sometimes fatal lung disease; other non-malignant respiratory diseases, such as chronic bronchitis; lung cancer; and kidney disease, including nephritis and end-stage renal disease.

Inhalation: For exposure to internal components: Dust may be harmful or cause irritation. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures.

Skin Contact: For exposure to internal components: Skin contact with large amounts of dust may cause mechanical irritation.

Eye Contact: For exposure to internal components: Contact causes severe irritation with redness and swelling of the conjunctiva.

Ingestion: For exposure to internal components: This material is harmful orally and can cause adverse health effects or death in significant amounts.

Chronic Symptoms: For exposure to internal components: Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (Inhalation). Pulmonary function may be reduced and pre-existing lung diseases such as: emphysema or asthma may be aggravated by inhalation exposure to dusts. Smoking aggravates the effects of exposure. Inhalation may lead to a progressive massive fibrosis which may be accompanied by right heart enlargement, heart failure, pulmonary failure of the lung and susceptibility to pulmonary tuberculosis. May cause cancer by inhalation. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand. Treatment will be based on severity and prognosis of disease.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: DO NOT FIGHT FIRES INVOLVING EXPLOSIVES. Water may be applied through fixed extinguishing system (sprinklers) as long as people need not be present for the system to operate.

Unsuitable Extinguishing Media: DO NOT fight fires involving explosives.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Explosive, could cause fire and secondary explosions. Combustible Dust.

Explosion Hazard: Risk of explosion by shock, friction, fire or other sources of ignition. Explosives, Division 1.4 - Explosives (with no significant blast hazard).

Reactivity: Fire or projection hazard. Silicates dissolve in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

5.3. Advice for Firefighters

Precautionary Measures Fire: This product is an explosive with a fire or projection hazard. DO NOT FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS.

Firefighting Instructions: DO NOT ATTEMPT TO FIGHT FIRE. Immediately evacuate all personnel from the area to a safe distance. Guard against re-entry. Thermal decomposition can lead to release of irritating gases and vapors.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Borane/boron oxides. Calcium oxides. Chromium oxides. Iron oxides. Potassium oxides. Chlorine compounds.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Evacuate danger area. Remove ignition sources. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Avoid generating dust.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel. Evacuate danger area.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Eliminate ignition sources. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. Absorb and contain with inert material. Place contents in suitable container for disposal. Avoid generation of dust during clean-up of spills.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Use only non-sparking tools. Be careful to avoid shock, friction, and contact with grit. Collect product for recovery or disposal. For release to land, contain discharge by constructing dykes or applying inert absorbent; for release to water, utilize damming and/or water diversion to minimize the spread of contamination. Collect contaminated soil and water, and absorbent for proper disposal. Notify applicable government authority if release is reportable or could adversely affect the environment. Do not mix with other materials. Avoid actions that cause dust to become airborne during clean-up such using compressed air. Use PPE described in Section 8. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Accumulation and dispersion of dust from many damaged devices with an ignition source can cause a combustible dust explosion. Keep dust levels to a minimum and follow applicable regulations. Cutting, crushing or grinding crystalline silica-bearing materials may release respirable crystalline silica, a known carcinogen. Use all appropriate measures of dust control or suppression and personal protective equipment.

Precautions for Safe Handling: This product is an explosive and should only be used under the supervision of trained and licensed personnel. As devices are unpackaged from their primary packaging, they may present greater sensitivity to projection or other fire hazards. Retain the original packaging until use and limit the number of unpacked devices. When a device is installed or deployed and is later removed from us without initiation, it should be replaced in its primary packaging or identical primary packaging. Keep away from sources of ignition - No smoking. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Avoid contact with eyes, skin and clothing. Handle empty containers with care because they may still present a hazard. Do not get in eyes, on skin, or on clothing. Avoid creating or spreading dust. Keep away from heat, sparks, open flames, and hot surfaces. No smoking.

Hygiene Measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Avoid creating or spreading dust. Use explosion-proof electrical, ventilating, lighting equipment.

Storage Conditions: Store under moderate temperatures recommended by competent authority. Store under dry conditions. Do NOT store explosives in a detonator magazine or detonators in an explosive magazine. Keep away from heat, spark and flames. Keep containers closed. Explosives should be kept well away from initiating explosives; protected from physical damage; separated from oxidizing materials, combustibles, and sources of heat. Isolate from incompatibles. Store locked up/in a secure area.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

Special Rules on Packaging: Keep only in the original container.

7.3. Specific End Use(s)

Control of pyrotechnic reactions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Calcium chromate (13765-19-0)		
Alberta	OEL TWA	0.001 mg/m³
British Columbia	OEL TWA	0.001 mg/m³ (total)
New Brunswick	OEL TWA	0.001 mg/m³
Nunavut	OEL STEL	0.003 mg/m³
Nunavut	OEL TWA	0.001 mg/m³
Northwest Territories	OEL STEL	0.003 mg/m³
Northwest Territories	OEL TWA	0.001 mg/m³
Ontario	OEL TWA	0.001 mg/m³
Québec	VEMP (OEL TWAEV)	0.001 mg/m³
Saskatchewan	OEL STEL	0.003 mg/m³
Saskatchewan	OEL TWA	0.001 mg/m³

Iron oxide (Fe2O3) (1309-37-1)		
USA ACGIH	ACGIH OEL TWA	5 mg/m³ (respirable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (TWA) [1]	10 mg/m³ (fume) 15 mg/m³ (total dust (Rouge) 5 mg/m³ (respirable fraction (Rouge)
USA NIOSH	NIOSH REL (TWA)	5 mg/m³ (dust and fume)
USA IDLH	IDLH	2500 mg/m³ (dust and fume)
Alberta	OEL TWA	5 mg/m³ (respirable)
British Columbia	OEL STEL	10 mg/m³ (fume)
British Columbia	OEL TWA	10 mg/m³ (regulated under Rouge-total particulate (Rouge) 3 mg/m³ (regulated under Rouge: particulate matter containing no Asbestos and <1% Crystalline silica-respirable particulate (Rouge) 5 mg/m³ (dust and fume)
Manitoba	OEL TWA	5 mg/m³ (respirable particulate matter)
New Brunswick	OEL TWA	5 mg/m³ (respirable fraction)
Newfoundland & Labrador	OEL TWA	5 mg/m³ (respirable particulate matter)
Nova Scotia	OEL TWA	5 mg/m³ (respirable particulate matter)

Nunavut	OEL STEL	10 mg/m³ (dust and fume) 20 mg/m³ (regulated under Rouge)
Nunavut	OEL TWA	5 mg/m³ (dust and fume) 10 mg/m³ (regulated under Rouge)
Northwest Territories	OEL STEL	10 mg/m³ (dust and fume) 20 mg/m³ (regulated under Rouge)
Northwest Territories	OEL TWA	5 mg/m³ (dust and fume) 10 mg/m³ (regulated under Rouge)
Ontario	OEL TWA	5 mg/m³ (respirable particulate matter)
Prince Edward Island	OEL TWA	5 mg/m³ (respirable particulate matter)
Québec	VEMP (OEL TWAEV)	5 mg/m³ (dust and fume)
Saskatchewan	OEL STEL	10 mg/m³ (dust and fume) 20 mg/m³ (regulated under Rouge)
Saskatchewan	OEL TWA	5 mg/m³ (dust and fume) 10 mg/m³ (regulated under Rouge)
Yukon	OEL STEL	10 mg/m³ (fume) 20 mg/m³ (regulated under Rouge)
Yukon	OEL TWA	5 mg/m³ (fume) 30 mppcf (regulated under Rouge) 10 mg/m³ (regulated under Rouge)

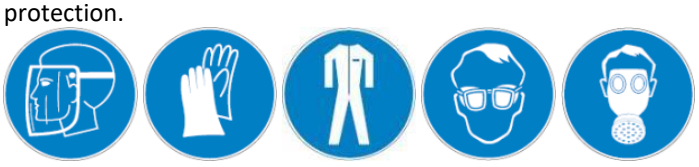
8.2. Exposure Controls

Appropriate Engineering Controls:

Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Proper grounding procedures to avoid static electricity should be followed. Product to be handled in a closed system and under strictly controlled conditions.

If product needs to be altered, use wet processing techniques if possible to minimize generation of dust.

Personal Protective Equipment: Gloves. Protective clothing. Protective glasses or goggles. Insufficient ventilation: wear respiratory protection.



Hand Protection: Wear protection against mechanical hazards. For exposure to internal components wear appropriate chemical gloves.

Eye and Face Protection: Safety glasses or chemical goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	No data available
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Evaporation Rate	:	No data available
Melting Point	:	No data available
Freezing Point	:	No data available
Boiling Point	:	No data available

Flash Point	:	No data available
Auto-ignition Temperature	:	No data available
Decomposition Temperature	:	No data available
Flammability (solid, gas)	:	No data available
Lower Flammable Limit	:	No data available
Upper Flammable Limit	:	No data available
Vapor Pressure	:	No data available
Relative Vapor Density at 20°C	:	No data available
Relative Density	:	No data available
Specific Gravity	:	No data available
Solubility	:	No data available
Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity	:	No data available
Explosive Properties	:	Explosives, Division 1.4 - Explosives (with no significant blast hazard)

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Fire or projection hazard. Silicates dissolve in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

10.2. Chemical Stability:

Risk of explosion by shock, friction, fire or other sources of ignition.

10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

10.4. Conditions to Avoid:

Avoid creating or spreading dust. Keep away from open flames, hot surfaces and sources of ignition. Incompatible materials. Sparks, heat, open flame and other sources of ignition. Dust accumulation (to minimize explosion hazard).

10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers.

10.6. Hazardous Decomposition Products:

Thermal decomposition may produce: Calcium oxides. Chromium oxides. Iron oxides. Potassium oxides. Chlorine compounds. Boron compounds. Crystalline silica exists in several forms, the most common of which is quartz. If crystalline silica (quartz) is heated to more than 870°C (1598 °F), it can change to a form of crystalline silica known as trydimite, and if crystalline silica (quartz) is heated to more than 1470°C (2678 °F), it can change to a form of crystalline silica known as cristobalite. The OSHA PEL for crystalline silica as trydimite and cristobalite is one-half of the OSHA PEL for crystalline silica (quartz).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity (Oral): Harmful if swallowed.

Acute Toxicity (Dermal): Not classified.

Acute Toxicity (Inhalation): Not classified.

LD50 and LC50 Data:

EP-250-3; EP-250-12; EP-250-14; EP-250-3X; EP-250-1XX; EP-250-20X; EP-250-22; EP-250-22-120M; EP-250-22-80M; EP-250-23 igniters	
ATE US/CA (oral)	1,255.76 mg/kg body weight

Skin Corrosion/Irritation: Not classified.

Eye Damage/Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: Not classified.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: May cause cancer (Inhalation).

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (Inhalation).

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity (Single Exposure): Not classified.

Aspiration Hazard: Not classified.

Symptoms/Injuries After Inhalation: For exposure to internal components: Dust may be harmful or cause irritation. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures.

Symptoms/Injuries After Skin Contact: For exposure to internal components: Skin contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Eye Contact: For exposure to internal components: Contact causes severe irritation with redness and swelling of the conjunctiva.

Symptoms/Injuries After Ingestion: For exposure to internal components: This material is harmful orally and can cause adverse health effects or death in significant amounts.

Chronic Symptoms: For exposure to internal components: Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (Inhalation). Pulmonary function may be reduced and pre-existing lung diseases such as: emphysema or asthma may be aggravated by inhalation exposure to dusts. Smoking aggravates the effects of exposure. Inhalation may lead to a progressive massive fibrosis which may be accompanied by right heart enlargement, heart failure, pulmonary failure of the lung and susceptibility to pulmonary tuberculosis. May cause cancer by inhalation. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Boron (7440-42-8)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.08 mg/l/4h
LC50 Inhalation Rat	> 5.08 mg/l/4h

calcium chromate (13765-19-0)	
LD50 Oral Rat	327 mg/kg

Iron oxide (Fe2O3) (1309-37-1)	
LD50 Oral Rat	> 10000 mg/kg (Source: IUCLID)
LC50 Inhalation Rat	5.05 mg/l/4h

Silica, amorphous, diatomaceous earth (68855-54-9)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 2.6 mg/l/4h (No deaths)
LC50 Inhalation Rat	> 2.6 mg/l/4h

calcium chromate (13765-19-0)	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

Iron oxide (Fe2O3) (1309-37-1)	
IARC Group	3

Silica, amorphous, diatomaceous earth (68855-54-9)	
IARC Group	3

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Very toxic to aquatic life with long lasting effects.

Iron oxide (Fe2O3) (1309-37-1)	
LC50 Fish 1	100000 mg/l (Exposure time: 96 h - Species: Danio rerio [static] Source: ECHA)

Potassium perchlorate (7778-74-7)	
EC50 - Crustacea [1]	1310 mg/l

12.2. Persistence and Degradability

Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential

Bioaccumulative Potential	Not established.

Silica, amorphous, diatomaceous earth (68855-54-9)	
BCF Fish 1	(no known bioaccumulation)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

APPROVAL No. EX2013120793

Proper Shipping Name : IGNITERS
Hazard Class : 1.4S
Identification Number : UN0454
Label Codes : 1.4S

Marine Pollutant : Marine pollutant

14.2. In Accordance with IMDG

Proper Shipping Name : IGNITERS
Hazard Class : 1.4S
Identification Number : UN0454
Label Codes : 1.4S

EmS-No. (Fire) : F-B
EmS-No. (Spillage) : S-X
Marine pollutant : Marine pollutant

14.3. In Accordance with IATA

Proper Shipping Name : IGNITERS
Hazard Class : 1.4S
Identification Number : UN0454
Label Codes : 1.4S

ERG Code (IATA) : 3L

14.4. In Accordance with TDG

Proper Shipping Name : IGNITERS
Hazard Class : 1.4S
Identification Number : UN0454
Label Codes : 1.4S

Packing Group : II
Marine Pollutant (TDG) : Marine pollutant

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

EP-250-3; EP-250-12; EP-250-14; EP-250-3X; EP-250-1XX; EP-250-20X; EP-250-22; EP-250-22-120M; EP-250-22-80M; EP-250-23	
SARA Section 311/312 Hazard Classes	Physical hazard - Explosive Health hazard - Carcinogenicity Health hazard - Specific target organ toxicity (single or repeated exposure) Health hazard - Serious eye damage or eye irritation Health hazard - Acute toxicity (any route of exposure) Physical hazard - Combustible dust

Boron (7440-42-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

calcium chromate (13765-19-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
CERCLA RQ	10 lb

Iron oxide (Fe2O3) (1309-37-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Silica, amorphous, diatomaceous earth (68855-54-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Potassium perchlorate (7778-74-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

15.2. US State Regulations

Boron (7440-42-8)
U.S. - New Jersey - Right to Know Hazardous Substance List

calcium chromate (13765-19-0)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Iron oxide (Fe2O3) (1309-37-1)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List

Silica, amorphous, diatomaceous earth (68855-54-9)
U.S. - Pennsylvania - RTK (Right to Know) List

Potassium perchlorate (7778-74-7)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List

15.3. Canadian Regulations

Boron (7440-42-8)
Listed on the Canadian DSL (Domestic Substances List)

calcium chromate (13765-19-0)
Listed on the Canadian DSL (Domestic Substances List)
Iron oxide (Fe2O3) (1309-37-1)
Listed on the Canadian DSL (Domestic Substances List)
Silica, amorphous, diatomaceous earth (68855-54-9)
Listed on the Canadian DSL (Domestic Substances List)
Potassium perchlorate (7778-74-7)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 07/01/2024

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

Expl. 1.4	Explosive Category 1.4
H302	Harmful if swallowed
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Glossary of Data Source Abbreviations

ATSDR: Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)
AU_WES: Australia WES
CHEMVIEW: ChemView (U.S. Environmental Protection Agency)
EC_RAR: European Commission Renewal Assessment Report
EC_SCOEL: European Commission Scientific Committee on Occupational Exposure Limits
ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals Reports
ECHA_API: European Chemicals Agency API
ECHA_RAC: ECHA Committee for Risk Assessment
EFSA: European Food Safety Authority
EPA: U.S. Environmental Protection Agency
EPA_AEGL: Acute Exposure Guideline Levels (U.S. Environmental Protection Agency)
EPA_FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act Reregistration Eligibility Decision (U.S. Environmental Protection Agency)
EPA_HPV: High Production Volume Chemicals (U.S. Environmental Protection Agency)
EPA_TRED: Risk Assessment for Tolerance Reassessment Eligibility Decision (U.S. Environmental Protection Agency)
EU_CLH: European Union Harmonised Classification and Labelling Proposal
EU_RAR: European Union Risk Assessment Report
FOOD_JOURN: Food Research Journal (1956)
IARC: The International Agency for Research on Cancer
IDLH: National Institute for Occupational Health and Safety Immediately Dangerous to Life or Health Value Profiles
IUCLID: International Uniform Chemical Information Database
JAPAN_GHS: Japan GHS Basis for Classification Data
JP_J-CHECK: Japan J-Check
KR_NIER: South Korea National Institute of Environmental Research Evaluations
NICNAS: Australia National Industrial Chemicals Notification and Assessment Scheme
NIOSH: National Institute for Occupational Health and Safety (U.S. Department of Health and Human Services)
NLM_CIP: National Library of Medicine ChemID plus database
NLM_HSDB: National Library of Medicine Hazardous Substance Data Bank
NLM_PUBMED: National Library of Medicine PubMed database
NTP: National Toxicology Program
NZ_CCID: New Zealand Chemical Classification and Information Database
OECD_EHSP: Environment, Health, and Safety Publication (Organisation for Economic Co-operation and Development)
OECD_SIDS: Screening Information Data Sets (Organisation for Economic Co-operation and Development)
WHO: World Health Organization

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.