

Material Safety Data Sheet



Graphite with Tungsten Additive: AXF-5Q5W, AXF-5Q10W, AXF-5Q20W

1. Product and company identification

Product name	: Graphite with Tungsten Additive: AXF-5Q5W, AXF-5Q10W, AXF-5Q20W
Material uses	: Not available.
Supplier/Manufacturer	: POCO Graphite, Inc. An Entegris Company 300 Old Greenwood Road Decatur, Texas 76234 800-433-5547, EXT-4202 (8am - 4pm CT, Mon - Fri)
MSDS authored by	: KMK Regulatory Services Inc.
In case of emergency	: Toll free: CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887

2. Hazards identification

Emergency overview

Physical state	: Solid.
Color	: Gray to black.
Odor	: Odorless.
Signal word	: WARNING!
Hazard statements	: MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR DURING PROCESSING ACTIVITIES (INCLUDING; BUT NOT LIMITED TO: CUTTING, SANDING, DRILLING, MACHINING, DUST CONTROL EQUIPMENT, OTHER DUST GENERATING ACTIVITIES). USERS OF THIS MATERIAL SHOULD PERFORM COMBUSTIBILITY TESTING, PRIOR TO USE, SPECIFIC TO THEIR USE CONDITIONS IF DUST IS TO BE GENERATED. MAY CAUSE EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Precautionary measures	: Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
Skin	: Slightly irritating to the skin.
Eyes	: Slightly irritating to the eyes.

Potential chronic health effects

Chronic effects	: Contains material that can cause target organ damage.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Contains material which may cause damage to the following organs: blood, cardiovascular system, upper respiratory tract, skin, eyes.

Over-exposure signs/symptoms

Inhalation	: No specific data.
Ingestion	: No specific data.

2. Hazards identification

- Skin** : Adverse symptoms may include the following:
irritation
redness
- Eyes** : Adverse symptoms may include the following:
irritation
watering
redness
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

United States

Name	CAS number	%
Graphite, synthetic	7440-44-0	80 - 95
Tungsten	7440-33-7	5 - 20

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- Eye contact** : Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention if symptoms occur.
- Inhalation** : Move exposed person to fresh air.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
- Notes to physician** : No specific treatment. Treat symptomatically.

5. Fire-fighting measures

- Flammability of the product** : No specific fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Fine dust clouds may form explosive mixtures with air.
- Special remarks on explosion hazards** : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

6. Accidental release measures

- Personal precautions** : Provide adequate ventilation. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Non-sparking tools should be used when working with dust. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Avoid generating dust as the product may form flammable dust/air mixtures. Dust levels must be kept within prescribed limits. Spilled product should be cleaned up and a high standard of housekeeping maintained. Transfer product using proper grounding and bonding procedures to avoid static accumulation. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous.
- Storage** : Maintain graphite blocks in stable position. Any machined generated dust should be maintained in closed container.

8. Exposure controls/personal protection

United States

Ingredient	Exposure limits
Graphite, synthetic Tungsten	ACGIH (United States). TWA: 10 mg/m ³ 8 hour(s). Form: Nuisance particulates. ACGIH TLV (United States, 2/2010). TWA: 5 mg/m ³ , (as W) 8 hour(s). Form: Insoluble STEL: 10 mg/m ³ , (as W) 15 minute(s). Form: Insoluble NIOSH REL (United States, 6/2009). STEL: 10 mg/m ³ , (as W) 15 minute(s). TWA: 5 mg/m ³ , (as W) 10 hour(s).

- Recommended monitoring procedures** : Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Ensure dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.
- Engineering measures** : It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling dusts generated from this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Hygiene measures** : Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

8. Exposure controls/personal protection

Personal protection

- Respiratory** : Not required under normal conditions of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Use gloves appropriate for work or task being performed. Recommended: Natural rubber (latex).
- Eyes** : Safety eyewear should be used when there is a likelihood of exposure. Recommended: Safety glasses with side shields.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Lab coat.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

9. Physical and chemical properties

- Physical state** : Solid.
- Color** : Gray to black.
- Odor** : Odorless.
- Melting point** : Sublimation temperature: 3650°C (6602°F)
- Relative density** : 2.35 to 2.75
- Solubility** : Insoluble in water.

10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : Minimize dust generation and accumulation.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

- Acute toxicity** : No specific data.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Tungsten	Eyes - Mild irritant	Rabbit	-	-	-
	Skin - Mild irritant	Rabbit	-	-	-

- IDLH** : Not available.
- Synergistic products** : Not available.

12. Ecological information

- Ecotoxicity** : No known significant effects or critical hazards.
- Other adverse effects** : No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

International transport regulations

DOT / IMDG / IATA : Not regulated.

15. Regulatory information

HCS Classification : Target organ effects

U.S. Federal regulations : **TSCA 8(a) PAIR:** Tungsten

United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Graphite, synthetic; Tungsten

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

Graphite, synthetic: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Tungsten: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations

Massachusetts : The following components are listed: Tungsten

New York : None of the components are listed.

New Jersey : The following components are listed: Tungsten

Pennsylvania : The following components are listed: Tungsten

California Prop. 65

No products were found.

15. Regulatory information

International regulations

- International lists**
- Australia inventory (AICS):** All components are listed or exempted.
 - China inventory (IECSC):** All components are listed or exempted.
 - Japan inventory:** Not determined.
 - Korea inventory:** All components are listed or exempted.
 - New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
 - Philippines inventory (PICCS):** All components are listed or exempted.

16. Other information

- Label requirements** : MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR DURING PROCESSING ACTIVITIES (INCLUDING; BUT NOT LIMITED TO: CUTTING, SANDING, DRILLING, MACHINING, DUST CONTROL EQUIPMENT, OTHER DUST GENERATING ACTIVITIES). USERS OF THIS MATERIAL SHOULD PERFORM COMBUSTIBILITY TESTING, PRIOR TO USE, SPECIFIC TO THEIR USE CONDITIONS IF DUST IS TO BE GENERATED. MAY CAUSE EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

- Hazardous Material Information System (U.S.A.)** : **Health :** 1 * **Flammability :** 0 **Physical hazards :** 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

- National Fire Protection Association (U.S.A.)** : **Health :** 1 **Flammability :** 0 **Instability :** 0

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

- Additional information** : Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.*

History

- Date of issue mm/dd/yyyy** : 06/01/2011
Date of previous issue : 11/01/2005
Version : 2

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