

SAFETY DATA SHEET

Date Printed: 05/15/2024 Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifier: (3N) 99.9% Chromium Vanadium Sputtering Target

Product Code: CR-V-03-ST

CAS Number: 89559-65-9

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements 10884 Weyburn Ave. Los Angeles, CA 90024 Tel: +1 310-208-0551 Fax: +1 310-208-0351 Emergency telephone number: +1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview OSHA Hazards No known OSHA hazards HMIS Classification Health hazard: 0 Flammability: 0 Physical hazards: 0 NFPA Rating Health hazard: 0 Fire: 0 Reactivity Hazard: 0 **Potential Health Effects** Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation. Ingestion May be harmful if swallowed.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition (wt%) Cr: 5 V: 95

SECTION 4. FIRST AID MEASURES

If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. In case of skin contact Wash off with soap and plenty of water. If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. In case of skin contact Wash off with soap and plenty of water.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Special protective equipment for fire-fighters Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions Avoid dust formation. Avoid breathing vapors, mist or gas. Environmental precautions No special environmental precautions required. Methods and materials for containment and cleaning up Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. Conditions for safe storage Keep container tightly closed in a dry and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values. Personal protective equipment Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Hand protection Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and drv hands. Eve protection Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Skin and body protection Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Hygiene measures General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Form Solid in various forms (powder, pieces, target) Colour grey Safety data pH no data available Melting point: no data available Boiling point: no data available Flash point no data available Ignition temperature no data available Lower explosion limit no data available Upper explosion limit no data available Vapor pressure no data available Density no data available Water solubility no data available

SECTION 10. STABILITY AND REACTIVITY

Chemical stability Stable under recommended storage conditions. Conditions to avoid no data available Materials to avoid Strong acids, Strong oxidizing agents Hazardous decomposition products Hazardous decomposition products formed under fire conditions. - Vanadium/vanadium oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

no data available Skin corrosion/irritation no data available Serious eye damage/eye irritation no data available Respiratory or skin sensitization no data available Germ cell mutagenicity no data available Carcinogenicity Carcinogenicity - rat - Intramuscular Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable. possible or confirmed human carcinogen by IARC. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Reproductive toxicity no data available Specific target organ toxicity - single exposure (GHS) no data available Specific target organ toxicity - repeated exposure (GHS) no data available Aspiration hazard no data available Potential health effects Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation. Additional Information

SECTION 12. ECOLOGICAL INFORMATION

Toxicity no data available Persistence and degradability no data available Bioaccumulative potential no data available Mobility in soil no data available PBT and vPvB assessment no data available Other adverse effects no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Product Offer surplus and non-recyclable solutions to a licensed disposal company. Contaminated packaging Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

DOT (US) Not dangerous goods IMDG Not dangerous goods IATA Not dangerous goods

SECTION 15. REGULATORY INFORMATION

OSHA Hazards No known OSHA hazards **DSL Status** All components of this product are on the Canadian DSL list. SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. SARA 313 Components Vanadium CAS-No. 7440-62-2 **Revision Date** 2007-03-01 SARA 311/312 Hazards No SARA Hazards Massachusetts Right To Know Components Vanadium CAS-No. 7440-62-2 **Revision Date** 2007-03-01 Pennsylvania Right To Know Components Vanadium CAS-No. 7440-62-2 **Revision Date** 2007-03-01 New Jersey Right To Know Components Vanadium CAS-No. 7440-62-2 **Revision Date**

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.