

Plasmaterials, Inc.  
 2268 Research Drive  
 Livermore, CA 94550  
 Ph: (925) 447-4030 Fx: (925) 447-4031  
<http://plasmaterials.com>

## SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION <b>VC</b>		PRODUCT NAME <b>Vanadium Carbide</b>
SUPPLIER: <b>Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030</b>	RECOMMENDED USE: <b>Laboratory Chemicals Scientific Research</b>	EMERGENCY TELEPHONE NUMBERS <b>US: 001-800-424-9300 Europe: 001-703-527-3887</b>

Section 2- HAZARD(S) IDENTIFICATION	
<b>Physical Hazards:</b> Not Classified	<b>Health Hazards:</b> Not Classified
<b>Environmental Hazards:</b> Not Classified	<b>OSHA Defined Hazards:</b> Not Classified
<b>LABEL ELEMENTS:</b>	
<b>Hazard Symbol:</b> None	<b>Signal Word:</b> None
<p style="text-align: center;"><b><u>HAZARD STATEMENTS</u></b></p> <p>-The substance does not meet the criteria for classification</p> <p style="text-align: center;"><b><u>PRECAUTIONARY STATEMENTS</u></b></p> <p><b>Prevention:</b></p> <ul style="list-style-type: none"> <li>-Observe good industrial hygiene practices</li> <li>-Wear protective gloves, clothing, eye protection and face protection.</li> <li>-Wash hands after handling.</li> <li>-Store away from incompatible materials.</li> <li>-Dispose of contents/container in accordance with local/regional/national/international regulations.</li> </ul> <p><b>Hazards not otherwise classified (HNOC):</b></p> <ul style="list-style-type: none"> <li>-None identified.</li> </ul>	

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS		
<b>COMPONENT</b>	<b>CAS-No</b>	<b>Molecular Weight</b>
<b>Vanadium Carbide</b>	<b>12070-10-9</b>	<b>62.95 g/mol</b>

Section 4- FIRST AID MEASURES
<p><b>INHALATION:</b> Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Consult a physician if symptoms develop or persist.</p> <p><b>SKIN CONTACT:</b> Wash off with soap and plenty of water. Obtain medical attention if irritation develops or persists.</p> <p><b>EYE CONTACT:</b> Flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Obtain medical attention if irritation develops or persists.</p> <p><b>INGESTION:</b> Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical advice/attention if symptoms occur.</p> <p><b>MOST IMPORTANT SYMPTOMS/EFFECTS:</b> Direct contact with eyes may cause temporary irritation.</p> <p><b>INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:</b> Provide general supportive measures and treat symptomatically.</p> <p><b>General Information:</b> Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.</p>

## Section 5- FIREFIGHTING MEASURES

### Suitable Extinguishing Media:

Water Fog, Foam, Dry Chemical Powder, Carbon Dioxide (CO<sub>2</sub>)

### Unsuitable Extinguishing Media:

Do not use water jet as an extinguisher as this will spread the fire.

### Specific Hazards Arising from the Chemical:

During fire, gases hazardous to health may be formed.

### General Fire Hazards:

No unusual fire or explosion hazards noted.

### Protective Equipment & Precautions for Firefighters:

As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

### Specific Methods:

Use water spray to cool unopened containers. Use standard firefighting procedures and consider the hazards of other involved materials.

## Section 6- ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Keep unnecessary personnel away. For personnel protection see Section 8.

**Environmental Precautions:** Avoid discharge into drains, water courses or onto the ground. See Section 12 for additional ecological information.

**Methods for Containment & Clean Up:** Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal see Section 13.

## Section 7- HANDLING AND STORAGE

**Handling:** Avoid prolonged exposure. Observe good industrial hygiene practices.

**Storage:** Store in original tightly closed container. Store away from incompatible materials.

## Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines:

Component	CAS-No.	Value	Control Parameters	Basis
VC	12070-10-9	STEL	3 mg/m <sup>3</sup>	USA.NIOSH Pocket Guide to Chemical Hazards
		TWA	1 mg/m <sup>3</sup>	USA.NIOSH Pocket Guide to Chemical Hazards

**Biological Limit Values:** No biological exposure limits noted for the ingredient(s)

**Engineering Controls:** Follow standard monitoring procedures.

### Personal Protective Equipment:

**Eye/Face Protection:** Wear safety glasses with side shields or goggles.

**Skin and Body 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 dry hands.

Wear suitable protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory Protection:** In case of insufficient ventilation, use a NIOSH/MSHA approved respirator.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants.

## Section 9- PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Solid  
**Appearance:** No information available  
**Odor:** No information available  
**Odor Threshold:** No information available  
**pH:** No information available  
**Melting Point/Range:** No information available  
**Boiling Point/Range:** No information available  
**Flash Point:** No information available  
**Evaporation Rate:** No information available  
**Flammability (solid,gas):** No information available  
**Flammability or Exposure Limits:**  
    **Upper:** No data available  
    **Lower:** No data available  
**Vapor Pressure:** No information available  
**Vapor Density:** No information available  
**Relative Density:** No information available  
**Solubility:** No information available  
**Partition coefficient; n-octanol/water:** No information available  
**Auto Ignition Temperature:** No information available  
**Decomposition Temperature:** No information available  
**Viscosity:** Not applicable  
**Explosive Properties:** Not explosive  
**Oxidizing Properties:** Not oxidizing

## Section 10- STABILITY AND REACTIVITY

**Reactive Hazard:** Stable and non-reactive under normal conditions of use, storage and transport.  
**Stability:** Stable under recommended storage conditions.  
**Conditions to Avoid:** Contact with incompatible materials  
**Incompatible Materials:** Strong oxidizing agents  
**Hazardous Decomposition Products:** No information available  
**Hazardous Polymerization:** No information available  
**Hazardous Reactions:** No information available

## Section 11- TOXICOLOGICAL INFORMATION

### **Information on Likely Routes of Exposure:**

**Inhalation:** Prolonged inhalation may be harmful.  
**Skin Contact:** No adverse effects due to skin contact are expected.  
**Eye Contact:** Direct contact with eyes may cause temporary irritation.  
**Ingestion:** Expected to be a low ingestion hazard.

### **Information on Toxicological Effects:**

**Acute Toxicity:** No information available  
**Skin Corrosion/Irritation:** Prolonged skin contact may cause temporary irritation.  
**Serious eye damage/irritation:** Direct contact with eyes may cause temporary irritation  
**Respiratory or Skin Sensitization:** No information available  
**Carcinogenicity:** This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA  
**Germ Cell Mutagenicity:** No information available

**Reproductive Effects:** No information available  
**Development Effects:** No information available  
**Specific Target Organ Toxicity – single exposure:** No information available  
**Specific Target Organ Toxicity – repeated exposure:** No information available  
**Aspiration Hazard:** No information available  
**Chronic Effects:** Prolonged inhalation may be harmful.

**Section 12- ECOLOGICAL INFORMATION**

**Toxicity:** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.  
**Persistence and Degradability:** No information available  
**Bioaccumulation/Accumulation:** No information available  
**Mobility in Soil:** No information available  
**Other Adverse Effects:** No information available.

**Section 13- DISPOSAL CONSIDERATIONS**

**Waste Disposal Methods:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contaminated packaging as unused product. Dispose in accordance with all applicable regulations.

**Section 14- TRANSPORT INFORMATION**

**DOT:** Not regulated as dangerous goods  
**IATA:** Not regulated as dangerous goods  
**IMDG/IMO:** Not regulated as dangerous goods

**Section 15- REGULATORY INFORMATION**

**US Federal Regulations:**  
**Superfund Amendments and Reauthorization Act of 1986 (SARA):**  
**Hazard Categories:**  
**Immediate Hazard:** No  
**Delayed Hazard:** No  
**Fire Hazard:** No  
**Pressure Hazard:** No  
**Reactivity Hazard:** No  
**SARA 302 Extremely Hazardous Substance:** Not listed  
**SARA 311/312 Hazardous Chemical:** Yes  
**SARA 313 (TRI Reporting):**

Component	CAS-No.	% by Weight
Vanadium Carbide (VC)	12070-10-9	100

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D):** Not regulated  
**CERCLA Hazardous Substance List (40 CFR 302.4):** Not listed  
**US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):** Not listed  
**US Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List:** Not regulated  
**US Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):** Not regulated.  
**US Safe Drinking Water Act (SDWA):** Contaminate candidate list  
**US Massachusetts RTK – Substance List:** Not regulated  
**US New Jersey Worker & Community Right-to-Know Act:** Vanadium Carbide (CAS No: 12070-10-9)  
**US New Jersey RTK – Substance List: Listed Substance:** Vanadium Carbide (CAS No: 12070-10-9)  
**US Pennsylvania RTK – Hazardous Substances:** Not regulated  
**US Pennsylvania Worker & Community Right-to-Know Law:** Not listed

**US Rhode Island Right-to-Know:** Vanadium Carbide (CAS No: 12070-10-9)

**US California Proposition 65:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

**US California Controlled Substances. CA Dept. of Justice (CA Health & Safety Code Section 11100):** Not listed

## Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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