

SECTION 1 – IDENTIFICATION

Trade Name: Vulcan OMC-292-TIC-Ultra **Manufacturer:** Vulcan Systems, LLC
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SECTION 2 – HAZARDOUS IDENTIFICATION

Classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and OSHA Hazard Communication Standard (29 CFR 1910.1200)

Product Hazard Classification: These products are not considered hazardous as shipped. Use appropriate personal protective equipment (gloves, safety glasses, etc.) while handling the product to prevent injury.

Product Label Elements (as-shipped product)

Hazard Symbol: No symbol **Signal Word:** No signal word

Product Use Hazards which do not result in GHS classification:

Electric Shock: Electric shock from equipment can kill or cause severe burns.

Arc Rays (Radiation): Arc rays can burn skin and injure eyes. Skin cancer has been reported and Ultraviolet Radiation is listed as a carcinogen by NTP.

Hazardous Substance(s) formed under the conditions of use:

Fumes and Smoke: The welding fume produced from this welding electrode may contain the following constituent(s) and/or their complex metallic oxides as well as solid particles or other constituents from the consumables, base metal, or base metal coating not listed below. Overexposure to welding fumes may result in symptoms such as metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer.

Sparks and Spatter: The welding process often results in sparks and spatter that may cause injuries. Hot workpieces may cause burns and hot slag from the weld may move unexpectedly. Welding processes may start a fire or cause an explosion.

SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS**Reportable Hazardous Ingredients**

Chemical Identity	CAS-No.	Content in weight percent (%)
Calcium Carbonate (CaCO ₃)	1317-65-3	0-2
Carbon (C)	7440-44-0	0-2
Chromium and chromium alloys or compounds (as Cr)	7440-47-3	7-9
Fluorides (as F)	15096-52-3	0-1
Fluorides (as F)	7789-75-5	0-5
Graphite	7782-42-5	0-2
Iron (Fe)	7439-89-6	75-85
Manganese (Mn)	7439-96-5	1-2
Molybdenum (Mo)	7439-98-7	1-2
Silicon (Si)	7440-21-3	0.5-2
Titanium (Ti)	7440-32-6	5-7
Titanium dioxide (TiO ₂)	13463-67-7	0-1

SECTION 4 – FIRST AID PROCEDURES

- Inhalation:** Excessive or repeated inhalation may provoke either immediate collapse or delayed toxic effects. These require immediate medical attention. Move victim to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and immediately obtain medical assistance.
- Skin Contact:** Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, immediately obtain medical assistance.
- Eye Contact:** Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Immediately obtain medical assistance.
- Arc rays can injure eyes. If exposed to arc rays, move victim to a dark room, remove contact lenses as necessary for treatment, cover eyes with a padded dressing and rest. Obtain medical assistance if symptoms persist.
- Electrocution:** Stop power to the equipment or remove the victim from contact with live circuits, if this can be done without risk to yourself. Organize transport to a medical facility.
- If breathing has stopped, perform artificial respiration and immediately obtain medical assistance.

SECTION 5 – FIRE-FIGHTING MEASURES

Non-flammable. Welding arc and sparks can ignite combustible and flammable products. Refer to the Canadian standard “Safety in Welding and Cutting and Allied Procedures” for fire prevention and protection information during the use of welding and allied procedure.

Extinguishing Media – Co₂ or Dry Chemical Extinguisher.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

In the case of a release of solid welding consumable products, solid objects can be picked up and placed into a disposal container. If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Wear proper personal protective equipment while handling. Do not discard into the trash.

SECTION 7 – HANDLING AND STORAGE

Handle with care to avoid cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Some individuals can develop an allergic reaction to certain materials. Retain all warning and product labels. Keep separate from acids and strong bases to prevent possible chemical reactions.

SECTION 8 – EXPOSURE CONTROL/PERSONAL PROTECTION

Chemical Identity	OSHA PEL TWA (mg/m ³)	ACGIH TLV TWA (mg/m ³)	NIOSH REL _s TWA (mg/m ³)
Calcium Carbonate (CaCO ₃)	15 total dust; 5 R	TLV withdrawn due to insufficient data	10 total dust; 5 R
Chromium and chromium compounds, (Cr)	1 metal; 0.5 Chromium II; 0.5 Chromium III; 0.005 Chromium VI	0.5 metal; 0.5 Chromium III; 0.01 Chromium VI	
Fluorides (as F)	2.5	2.5	2.5
Graphite	15 total dust, 5 R	2 R (all forms except graphite fibers)	
Iron (Fe)	15 total dust; 5 respirable dust; 5 fume	10 total dust, 5 fumes	
Iron Oxide (Fe ₂ O ₃)	10 fume	5 R	5 dust and fume, as Fe
Manganese and inorganic compounds (Mn)	C 5	0.02 R; 0.1 I	1; C 3
Molybdenum and insoluble compounds (Mo)	15 total dust	10 I; 3 R	
Molybdenum and soluble compounds (Mo)	5	0.5 R	
Silicon (Si)	15 total dust, 5 respirable	TLV withdrawn due to insufficient data	
Sodium Aluminum Fluoride, as F	2.5		2.5
Titanium dioxide (TiO ₂)	15 total dust	10	

Additional exposure limits under the conditions of use

Chemical Identity	OSHA PEL TWA	ACGIH TLV TWA	NIOSH REL _s TWA
Carbon Dioxide	5,000 ppm, 9,000 mg/m ³	5,000 ppm, 9,000 mg/m ³ ; STEL 30,000 ppm, STEL 54,000 m/m ³	5,000 ppm, 9,000 mg/m ³ ; STEL 30,000 ppm, STEL 54,000 m/m ³
Carbon Monoxide	50 ppm, 55 mg/m ³	25 ppm, 29 m/m ³	35 ppm, 40 mg/m ³ ; C 200ppm, C 229 mg/m ³
Nitrogen Dioxide	C 5 ppm, 9mg/m ³	0.2 ppm	STEL 1 ppm, STEL 1.8 mg/m ³
Ozone	0.1 ppm, 0.2 mg/m ³	0.2 ppm, 0.4 mg/m ³ (≤ 2hours)	C 0.1 ppm, C 0.2 mg/m ³
Manganese – Fume – as Mn	C 5mg/m ³		1 mg/m ³ ; STEL 3 mg/m ³
Manganese – inhalable fraction – as Mn		0.1 mg/m ³	
Manganese – respirable fraction – as Mn		0.02 mg/m ³	

Note: PEL and TLV values are TWA unless otherwise noted with C, R or STEL.	
CAS No: Chemical Abstract Service registry number.	PEL: Permissible Exposure Limit.
OSHA: Occupational Health and Safety Administration.	REL: Recommended Exposure Limit
ACGIH: American Conference of Governmental Industrial Hygienists.	
NIOSH: U.S. National Institute for Occupational Safety and Health	
EPCRA: Emergency Planning and Community Right-to-Know Act.	
TLV: Threshold Limit Value – the airborne concentration of substances which is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects.	
TWA: 8-Hour Time Weighted Average – the time weighted average concentration of exposure that should not be exceeded for any 8-hour work shift of a 40-hour work week.	
STEL: Short Term Exposure Limit – a 15-minute time weighted average concentration of exposure that should not be exceeded at any time during a workday even if the 8-hour TWA is within limits.	
C: Ceiling Value – concentration that should not be exceeded during any part of the working exposure.	

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Cored Welding Wire	Upper/lower flammability or exposure limits	N/A
Odor	N/A	Vapor Pressure	N/A
Odor threshold	N/A	Vapor density	N/A
pH	N/A	Relative Density	N/A
Melting point/freezing point	N/A	Solubility	N/A
Initial boiling point and boiling range	N/A	Flash point	N/A
Evaporation rate	N/A	Flammability	N/A
Partition coefficient	N/A	Auto-ignition temperature	N/A
Decomposition temperature	N/A	Viscosity	N/A

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: Contact with acids or strong bases can result in gas formation.

Chemical stability: The product is stable under normal conditions.

Conditions to avoid: Avoid heat, moisture or contamination.

Incompatible materials: Strong oxidizing substances. Strong acids. Strong bases.

Hazardous decomposition products:

Fumes and gases produced during welding are chemically very complex, and cannot be classified simply. Their composition and quantity are dependent upon the welding consumables used, the metal being welded, the welding process, and other factors. When the electrode is consumed, the fumes and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. The composition of these fumes and gases are the concerning matter. Decomposition products include those originating from the volatilization, reaction, or oxidation of the ingredients shown in Section 3, plus those from the base metal, coating and the other factors noted above. Reasonably expected fume constituents include: Fluorides and oxides, silicates, or carbonates formed from the ingredients. Ultraviolet radiation given off by welding can also react with chlorinated hydrocarbon vapors from cleaning and degreasing products to form phosgene gas, as well as react with oxygen and nitrogen to produce ozone and nitrogen oxides. Other gaseous reaction products may include carbon monoxide, carbon dioxide, and fluorine. Established OSHA exposure limits for the hazardous ingredients are listed in Section 8. The ACGIH-1985 preface states: "The TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations."

SECTION 11 – TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation: Potential chronic health hazards related to the use of welding consumables are most likely to stem from inhalation exposure.

Skin contact: Arc rays can burn the skin and skin cancer has been reported.

Eye contact: Arc rays can injure eyes.

Symptoms related to the physical, chemical and toxicological characteristics**Inhalation:**

Chromium (VI) Chromates can cause ulceration, nasal septum perforation, and severe bronchial tube and lung irritation. Liver damage and allergic reactions, including skin rash have been reported. Asthma has been reported. Skin contact may result in irritation, ulceration, sensitization and contact dermatitis. Chromates contain the hexavalent form of chromium which is listed by the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) as posing a cancer risk to humans.

Manganese Overexposure to manganese fumes may affect the brain and central nervous system, resulting in poor coordination, difficulty speaking, and arm or leg tremor. These conditions can be irreversible.

Carcinogenicity

Product: Arc Rays: Use of this product produces arc rays that have been reported to cause skin cancer.

Specified substances may be present in the welding fumes and are dangerous to your health. Specific classification of welding fumes is difficult because of the varying base metals, coatings, air contamination and processes.

Welding Fume	IARC-2B	Possibly carcinogenic to humans
Chromium (VI)	IARC-1	Carcinogenic to humans
Chromium (VI)	NTP-K	Known to be a human carcinogen
Titanium Dioxide	IARC-2B	Possibly carcinogenic to humans

SECTION 12 – ECOLOGICAL INFORMATION

This product may corrode under normal environmental conditions, but otherwise degrades slowly or not at all. Avoid conditions that could lead to accumulation in soils or groundwater.

SECTION 13 – DISPOSAL CONSIDERATIONS

General Information:

Avoid or minimize the generation of waste wherever possible. Recycle in an environmentally acceptable and regulatory compliant manner, when practical. Dispose of non-recyclable products in accordance with all applicable Federal, State, and Local requirements.

Disposal Instructions:

Discharge or disposal may be subject to national, state or local laws. Do not allow to enter drains, sewers or watercourses. Disposal of this product may be regulated as a Hazardous Waste. The welding consumable and/or by-products from the process (including, but not limited to slag, dust, etc.) may contain levels of leachable heavy metals such as Chromium. Prior to disposal, a representative sample must be analyzed in accordance with US EPA's Toxicity Characteristic Leaching Procedure (TCLP) to determine if any constituents exist above regulated threshold levels. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner according to Federal, State and Local Regulations.

SECTION 14 – TRANSPORTATION INFORMATION

No regulations or restrictions are applicable. No special precautions are required.

SECTION 15 – REGULATORY INFORMATION

Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal or local regulations. Take precautions when welding to protect yourself and others.

USA: Under the OSHA Hazard Communication Standard these products are considered hazardous.

These products contain or produce a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). (California Health and Safety Code § 25249.5 et seq.)

United States EPA Toxic Substance Control Act: All constituents of these products are on the TSCA inventory list or are excluded from listing.

EPCRA/SARA Title III

The product identified in Section 1 contains or produces one or more chemicals subject to the reporting requirements of section 311, 312, 313 of Emergency Planning and Community Right-to-know Act (EPCRA) of 1986 (40 CFR 372 and 370). This product may contain the following chemicals subject to section 313 reporting: Chromium, Chromium Compounds, Nickel, Nickel Compounds, Manganese, Manganese Compounds, Aluminum, Aluminum Compounds, Barium Compounds, Cobalt, Cobalt Compounds, Vanadium Compounds, Copper, and Copper compounds; refer to Section 3. If you are unsure whether you are subject to the reporting requirements of EPCRA section 313, or need more information, call the EPA's EPCRA Call center at 800 424-9346.

SECTION 16 – OTHER INFORMATION

Vulcan Systems, LLC, believes this data to be accurate, but no warranty, expressed or implied, is made.