

SAFETY DATA SHEET (SDS)

Revised: July 2026

SECTION 1 – IDENTIFICATION

Trade Name: Vulcan T-943-HW
Emergency Telephone. No: (989)739-8050

Manufacturer: Vulcan Systems, LLC
 5740 F-41, Oscoda, MI 48750

SECTION 2 – HAZARDOUS IDENTIFICATION**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**

Health, Skin corrosion/irritation, 1
 Health, Specific target organ toxicity - Single exposure, 3
 Health, Carcinogenicity, 1
 Health, Specific target organ toxicity - Repeated exposure, 2

GHS Hazard Statements:

H314 - Causes severe skin burns and eye damage
 H335 - May cause respiratory irritation
 H350 - May cause cancer
 H373 - May cause damage to organs through prolonged or repeated exposure
 CGA-HG11 - SYMPTOMS MAY BE DELAYED.

Hazards not otherwise classified (HNOC) or not covered by GHS:

Route of Entry: Eyes; Skin

Target Organs: Throat; Nose, Respiratory system

Inhalation: Short term overexposure to welding fumes may result in discomfort such as: dizziness, nausea, or dryness or irritation of the nose, throat, lungs, and/or eyes.

Acute Effects: Irritating to the nose, throat and respiratory tract.

Chronic Toxicity: Chronic overexposure to welding fumes can result in: Chronic respiratory problems, iron build-up in the lungs, bone erosion, reduced pulmonary functions and nervous disorders.

Eye Contact: Fumes may be moderately irritating to the eyes. The bright light produced by the arc can damage the eyes.

GHS Label elements, including precautionary statements:

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:**GHS Precautionary Statements:**

P232 - Protect from moisture.
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
 P271 - Use only outdoors or in a well-ventilated area.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 CGA-PG27 - Read and follow the Safety Data Sheet (SOS) before use.

SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
7439-89-6	0-95%	Iron
7440-47-3	0-28%	Chromium
7440-02-0	0-13%	Nickel, metallic and alloys
7439-98-7	0.2-10%	Molybdenum: soluble and insoluble compounds
7440-62-2	0-2.5%	Vanadium
7439-96-5	0.05-3.25%	Manganese compounds and fumes (as Mn)
7440-21-3	0.05-1.2%	Silicon
1333-86-4	0.05-0.3%	Carbon black
7440-48-4	0-13%	Cobalt, metal, dust and fume (as Co)
13463-67-7	2-15%	Titanium dioxide
7789-75-5	0-5%	Calcium fluoride (CaF ₂)
1309-48-4	0-15%	Magnesium oxide (MgO)
1309-37-1	0.5-8%	Iron oxide (Fe ₂ O ₃)
7631-86-9	0.5-5%	Silica, amorphous
7440-32-6	0.05-10%	Titanium
7440-03-1	0-2%	Niobium
7429-90-5	0-1.8%	Aluminum
1317-65-3	0-2%	Calcium carbonate
1506-52-3	0-2%	Cryolite (F)
7440-24-6	0-1%	Strontium carbonate
1344-09-8	0-1%	Sodium Silicate
1312-76-1	0-1%	Potassium Silicate
7440-33-7	0-5.5%	Tungsten
68187-64-4	0-10%	Nepheline Syenite

SECTION 4 – FIRST AID PROCEDURES

If overcome by smoke or fumes, remove the victim to fresh air and call for medical aid. Employ first aid techniques recommended by the Red Cross.

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

Not Applicable as product cannot leak or be spilled.

SECTION 7 – HANDLING AND STORAGE

Read and understand manufacturer's instructions and the precautionary label on the product. See American National Standard Z249.1 "Safety in Welding and Cutting" published by the American Welding Society. Maintain all exposure below the limits in section 5. Monitor the air to ensure that the levels are below the above mentioned limits. See AWS F1.1 "Methods for Sampling Airborne Particles Generated by Welding and Allied Procedures" and AWS F1.3 "Evaluating Constituents in the Welding Environment: A Sampling Strategy Guide."

Prevent waste from contaminating the surrounding environment, discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, and local regulations.

SECTION 8 – EXPOSURE CONTROL/PERSONAL PROTECTION

This section covers the material from which this product is manufactured. The term “hazardous ingredients” should be interpreted as a term required and defined in OSHA hazard communication standard. This product contains toxic chemicals subject to the reporting requirements of section 313 of title III of SARA and CFR part 372.

Exposure Limits:

CHEMICAL NAME	OSHA PEL	ACGIH TLV
Iron	10 mg/m3 TWA (Total Dust)	10 mg/m3 TWA (particles)
Chromium	1 mg/m3	0.5 mg/m3
Nickel Metal	1 mg/m3	1.5 mg/m3
Soluble compounds, as Mo	15 mg/m3	10 mg/m3
Vanadium	0.05 mg/m3 TWA	1 mg/m3 TWA
Manganese compounds	5 mg/m3	1 mg/m3
Silicon	10 mg/m3* = Total dust, <=Respirable fraction	10 mg/m3 Total Dust
Carbon black	NL	NL
Cobalt	.01 mg/m3 TWA	.02 mg/m3 TWA
Titanium dioxide	10 mg/m3 NL = Not Listed	10 mg/m3
Calcium Fluoride	2.5 mg/m3 As F	2.5 mg/m3
Magnesium Oxide	15 mg/m3	10 mg/m3 (Fume)
Iron oxide	10 mg/m3 TWA (Total Dust)	10 mg/m3 TWA (particles)
Silica	10 mg/m3	10 mg/m3
Titanium	10 mg/m3 NL = Not Listed	10 mg/m3
Niobium	NL	NL
Calcium Carbonate	15 mg/m3	10 mg/m3
Cryolite	10 mg/m3 TWA	3 mg/m3 TWA
Strontium Carbonate	NL	NL
Sodium Silicate	NL * NL = Not Listed	NL
Potassium Silicate	15 mg/m3 TWA	5 mg/m3 TWA

Welding fumes cannot be classified simply. The composition and quantity of both are dependent on the metal being welded, the process, procedures, and alloys used. Other conditions which also influence the composition and quality of the fumes and gases to which workers may be exposed include coating on the metal being welded (such as paint, plating, or galvanizing), the number of welders, the volume of the work area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, and presence of contaminants in the atmosphere (ie, chlorinated hydrocarbon vapors from cleaning & degreasing activities).

Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below TLVs (threshold limit values) in the workers' breathing zone and the general area. Train the welder to keep his head out of the fumes. Use respirable fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below the TLV.

Wear helmet or use a face shield with filter lens. Wear hand, head, and body protection, which help to prevent injury from radiation, sparks, and electrical shock. Train the welder not to touch live electrical parts and insulate himself from work and ground.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid	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

Not Applicable

SECTION 11 – TOXICOLOGICAL INFORMATION

Not Applicable

SECTION 12 – ECOLOGICAL INFORMATION

Not Applicable

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of in accordance with federal, state, and local regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Not Applicable

SECTION 15 – REGULATORY INFORMATION**Component (CAS#) [%] - CODES**

Iron (7439-89-6) [0-60.47%] TSCA

RQ(5000LBS), Chromium (7440-47-3) [0.35-28%] CERCLA, EPCRAWPC, HWRCA, MASS, NJHS, NRC, OSHAWAC, PA, PRIPOL, SARA313, TOXICPOL, TSCA, TXAIR

RQ(100LBS), Nickel, metallic and alloys (7440-02-0) [0-13%] CERCLA, EPCRAWPC, MASS, NJHS, NRC, OSHAWAC, PA, PRIPOL, SARA313, TOXICPOL, TSCA

Molybdenum: soluble and insoluble compounds (7439-98-7) [0.2-10%] MASS, OSHAWAC, PA, TSCA, TXAIR

Vanadium (7440-62-2) [0-2.5%] EPCRAWPC, MASS, NJHS, PA, SARA313, TSCA

Manganese compounds and fumes (as Mn) (7439-96-5) [0.05-3.25%] MASS, NJHS, OSHAWAC, PA, SARA313, TSCA, TXAIR

Silicon (7440-21-3) [0.05-1.2%] MASS, OSHAWAC, PA, TSCA, TXAIR

Cobalt, metal, dust and fume (as Co) (7440-48-4) [0-10%] MASS, NJHS, OSHAWAC, PA, PROP65, SARA313, TSCA, TXAIR

Titanium dioxide (13463-67-7) [2-15%] MASS, OSHAWAC, PA, TSCA, TXAIR

Calcium fluoride (CaF₂) (7789-75-5) [0-5%] TSCA

Magnesium oxide (MgO) (1309-48-4) [0-15%] MASS, OSHAWAC, PA, TSCA, TXAIR

Iron oxide (Fe₂O₃) (1309-37-1) [0.5-8%] MASS, OSHAWAC, PA, TSCA, TXAIR

Silica, amorphous (7631-86-9) [0.5-5%] MASS, NJHS, PA, TSCA

Titanium (7440-32-6) [0.05-10%] TSCA

Niobium (7440-03-1) [0-2%] TSCA

Aluminum (7429-90-5) [0-1.8%] EPCRAWPC, MASS, NJHS, OSHAWAC, PA, SARA313, TSCA, TXAIR

Calcium carbonate (1317-65-3) [0-2%] MASS, OSHAWAC, PA, TSCA, TXAIR

Cryolite (F) (1506-52-3) [0-2%]

Strontium carbonate (7440-24-6) [0-1%] TSCA

Sodium Silicate (1344-09-8) [0-1%] TSCA

Potassium Silicate (1312-76-1) [0-1%] TSCA

Tungsten (7440-33-7) [0-5%] MASS, OSHAWAC, PA, TSCA, TXAIR

Nepheline syenite, manganese zirconium brown (68187-64-4) [0-10%] TSCA

Regulatory CODE Descriptions

RQ = Reportable Quantity
 TSCA = Toxic Substances Control Act
 CERCLA = Superfund clean up substance
 EPCRAWPC = EPCRA Water Priority Chemicals
 HWRCA = RCRA Hazardous Wastes
 MASS = MA Massachusetts Hazardous Substances List
 NJHS = NJ Right-to-Know Hazardous Substances
 NRC = Nationally Recognized Carcinogens
 OSHAWAC = OSHA Workplace Air Contaminants
 PA = PA Right-To-Know List of Hazardous Substances
 PRIPOL = Clean Water Act Priority Pollutants
 SARA313 = SARA 313 Title III Toxic Chemicals
 TOXICPOL = Clean Water Act Toxic Pollutants
 TXAIR = TX Air Contaminants with Health Effects Screening Level

SECTION 16 – OTHER INFORMATION

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