

## Section I - Chemical Product and Company Identification

Manufacturers name	IKONICS Corporation
Address	4832 Grand Avenue, Duluth, MN 55807
Telephone number	218 628-2002 Customer Service
Emergency phone number	800 424-9300 Chemtrec USA / 703/527-3887 International (collect)
Product name	Ikon Metal: Stainless Steel

## Section II – Hazardous Ingredients

Ingredients	Percent(wt%)	CAS#	OSHA PEL	ACGIH TLV	VAPOR PSI
Styrene	0-15%		100.00 ppm	20.00 ppm	4.50mmHg @ 68°F
Polymer(s)	12-15%		not established	not established	
304L Stainless Steel Powder	70-78%		not established	not established	
Carbon	<0.1%	7440-44-0	15 mg/m <sup>3</sup>	not established	
Chromium	12-14%	7440-47-3	0.5 mg/m <sup>3</sup> **	not established	
Iron	49-54%	7439-89-6	10 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	
Manganese	0-0.12%	7439-96-5	5 mg/m <sup>3</sup> (C)	0.2 mg/m <sup>3</sup> (B)	
			(C = ceiling value, B = Inorganic compounds)		
Nickel	7-8%	7440-02-0	1 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>	
Silicon	0-1%	7440-21-3	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
Sulfur	0-0.01%	7404-34-9	not established	not established	

## Section III – Physical Data

Appearance	Solid
Boiling point	Not Applicable
Weight (per gallon)	Not Applicable
Percent volatile (by wt)	Not Applicable
Solubility in water	Non-soluble
Evaporation rate	Not Applicable
Vapor density	Not Applicable
VOC	Not Applicable
pH	Not Applicable

## Section IV – Fire and Explosion Data

Flash point	Not Applicable
Autoignition Temperature	None reported for the alloy but metal powders can burn and form explosive mixtures in air. Chromium dust cloud 1076°F (580°C), dust layer 752°F(400°C).
Lower Explosive Limit	None reported for alloy but some component powders do have reported limits – Chromium 0.23 oz/ft <sup>3</sup> .
Extinguishing media	Do not use water or halon. Use dry sand, dry dolomite or dry graphite powder or other dry chemical extinguishing agent formulated for metal fires.
Unusual Fire or Explosion Hazards	Powder may burn. Dust is an explosion hazard.
Hazardous Combustion Products	Toxic metal oxides and carbon and nitrogen oxides may be produced during a fire involving metal alloys. Alloys containing nickel may also produce poisonous nickel carbonyl.

**Section V – Health Hazard Data**

HMIS Codes 2-1-1-F Minimal=0, Slight=1, Moderate=2, Serious=3, Severe=4

Also refer to Section IX for additional important information.

*Effects of overexposure*

Eye contact Dust from machining may cause eye irritation.  
Skin contact Overexposure to dust from machining may cause irritation and redness to skin. Repeated or prolonged contact may cause sensitization with irritation to skin and mucous membranes.  
Inhalation Over exposure to dust can result in respiratory tract irritation as well as a metallic taste. Also, one might experience difficulty breathing or rapid breathing as well as chest pain or tightness. Avoid inhalation of metal oxide fumes when heated.  
Ingestion No specific information available. Small amounts of consumption are likely non harmful.

*First aid emergency procedures*

Eye Flush with plenty of water for at least 15 minutes and seek medical attention.  
Skin Wash with soap and water, should irritation occur, seek medical attention.  
Inhalation Remove to fresh air and give artificial respiration if not breathing. Call a physician.  
Ingestion Do not induce vomiting. Seek medical attention. Contact a poison control center.

**Section VI – Reactivity Data**

Stability Unstable\_\_\_ Stable X  
Conditions to avoid Stable under normal conditions, however, avoid excessive heat and moisture.  
Incompatibility (materials to avoid) None known  
Hazardous decomposition products Toxic metal oxides and carbon and nitrogen oxides may be produced during a fire involving metal alloys. Alloys containing nickel may also produce poisonous nickel carbonyl.  
Hazardous polymerization May occur \_\_ Will not occur X

**Section VII – Spill or Leak Procedures**

Spill cleanup instructions Spills can be cleaned using standard shop procedures and minimizing dust produced during clean up. To clean up dust, the use of a vacuum with a HEPA filter is recommended. Use proper PPE when cleaning up a spill.  
Waste disposal method Dispose of in accordance with federal, state, and local laws.

We make no guarantee or warranty of any kind that the use or disposal of this product is in compliance with all federal, state, or local laws. It is the obligation of each user of the product mentioned herein to determine and comply with the requirements of all applicable statutes.

**Section VIII – Control Measures / Personal Protection**

Engineering controls Ventilation – Where feasible, enclose processes to prevent dust and fume dispersion into the work area. Provide local and general exhaust to keep airborne concentrations below exposure limits and as low as possible.  
*Personal Protection Equipment (PPE)*  
Gloves Protective gloves should be worn when working with large pieces of Ikon Metal for protection from sharp edges. During machining of smaller pieces, latex or neoprene gloves may be worn to reduce irritation due to dust.  
Eye Personal eye protection is required.  
Respiratory Wear O.S.H.A. (29CFR 1910.134) protection if there is potential for exposure to dust or fumes. Avoid breathing of dust from the Ikon Metal.  
Where contact may occur Use proper PPE based on activity.  
Safety shower and eyewash Should be available.

**Section IX – Handling and Storage**

Handling and storage information

Hexavalent chromium may be released during machining or lasering. Use local exhaust ventilation to protect against dust and fume inhalation. If workers are exposed to dust provide appropriate respiratory, eye, and skin protection. Guard against settled dust accumulation. Use cleanup measures that minimize making dust airborne. To clean up dust, the use of a vacuum with a HEPA filter is recommended. Store away from extreme heat and moisture. Do not store near acids, caustics, halogenated compounds, oxidizers, or flammables.

Other precautions

Industrial use only. Keep out of reach of children.  
Do not take internally. Do not expose to high heat such as welding.

**Section X – Regulation Information**

DOT classification

Not a DOT controlled material (United States).

TSCA

All ingredients are listed chemicals in the TSCA registry. In the instance of the metal powder, the individual components are listed.

SARA Title III

This product may contain styrene which is subject to the reporting requirements of SARA Title III, Section 313, and 40 CFR Part 372.

**Toxicology Information**

Toxicological information is not available for most pure metals and metal powders. Information may be available for metal oxides, metal salts and other metal compounds. Refer to toxicological reference sources such as NIOSH RTECS for information if client use of this alloy creates metal compounds. Select information on metals and metal powders is listed below.

Carbon – Acute oral, small lab animals – LD<sub>LO</sub> => 5gm/kg

Chromium – Acute oral effect, human – LD<sub>LO</sub> = 71 mg/kg

Iron – Acute oral, human – 20-60 ug/kg

Manganese – Acute inhalation, human – TC<sub>LO</sub> = 2300 ug/m<sup>3</sup>

Nickel – Acute oral, guinea pig – LD<sub>LO</sub> = 5 mg/kg

Nickel – Acute inhalation, guinea pig – TC<sub>LO</sub> = 15 mg/m<sup>3</sup>

Silicon – Acute oral, rat – LD = 3160 mg/kg

Approved by: VP Technology, Toshi Komatsu 218 628-2217 ext. 142

Notice to reader

(Approved by U.S. Department of Labor “Essentially Similar” to form OSHA-20)

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