

**Issue Date** 29-Apr-2015

**Revision Date** 29-Apr-2015

**Version** 1

## 1. IDENTIFICATION

**Product identifier**

**Product Name** All General Carbide Corporation Grades containing Cobalt, Nickel, Nickel-Cobalt, or Nickel-Cobalt-Chromium

**Other means of identification**

**Material Name** Cemented Carbide Product with Cobalt, Nickel, Nickel-Cobalt, or Nickel-Cobalt-Chromium Binder

**Chemical Family** Refractory Metal Carbide

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Die and Wear Parts

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**
**Manufacturer Address**

General Carbide Corporation  
 1151 Garden St.  
 Greensburg, PA 15601  
**Phone:** (800) 245-2465 / (724) 836-3000  
**Fax:** (800) 547-2659 / (724) 836-6274  
 www.generalcarbide.com

**Emergency telephone number**

**Employee Safety & Health Manager** (800) 245-2465  
 (Not staffed 24/7)

## 2. HAZARDS IDENTIFICATION

**Classification**
**OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Respiratory sensitization	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1
Combustible dust	-

**Label elements**
**Emergency Overview**
**Danger**
**Hazard statements**

May cause allergy or asthma symptoms or breathing difficulties if inhaled  
 May cause an allergic skin reaction  
 May cause cancer  
 Causes damage to organs through prolonged or repeated exposure  
 May form combustible dust concentrations in air



**Appearance** Dark Gray; Solid Metal

**Physical state** Solid

**Odor** No Odor

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
In case of inadequate ventilation wear respiratory protection  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves  
Do not breathe dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
Specific treatment (See Section 4)  
IF ON SKIN: Wash with plenty of soap and water  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing  
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

**Other Information**

- May be harmful if swallowed
  - Very toxic to aquatic life with long lasting effects
  - Very toxic to aquatic life
- Unknown Acute Toxicity ≥50% of the mixture consists of ingredient(s) of unknown toxicity

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Weight-%
Tungsten Carbide	12070-12-1	50-97
Cobalt	7440-48-4	0-30
Nickel	7440-02-0	0-25
Tantalum Carbide (Ta4C5)	12070-06-3	0-22
Chromium	7440-47-3	0-5
Chromium Carbide	12012-35-0	0-5
Molybdenum	7439-98-7	0-5

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

**4. FIRST AID MEASURES**

**First aid measures**

**Eye contact** If irritation occurs, flush with copious amounts of water. If irritation persists, seek medical attention.

**Skin Contact** If irritation or rash occurs, thoroughly wash affected area with soap and water and isolate from exposure. If irritation or rash persists, seek medical attention.

**Inhalation** If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.), remove from exposure and seek medical attention.

**Ingestion** If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media**

For powder fires, smother with dry sand, dry dolomite, ABC fire extinguisher, or flood with water.

**Unsuitable extinguishing media** No information available.

**Specific hazards arising from the chemical**

Hard cemented carbide product is not a fire hazard. Dusts generated in grinding operations may ignite if allowed to accumulate and subjected to an ignition source.

Dusts may present a fire or explosion hazard under rare favoring conditions of particle size, dispersion and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

**Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective equipment and precautions for firefighters**

For a powder fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire, fire fighters should use a self-contained breathing apparatus.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** If airborne dust is generated, use an appropriate approved respirator. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling.

**Other Information** Ventilate area or spill. Clean up using methods which avoid dust generation such as vacuum (with appropriate filter to prevent airborne dust levels which exceed exposure limits), wet mop or wet clean-up. Keep containers closed when not in use.

**Environmental precautions**

**Environmental precautions** See Section 12 for additional ecological information.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on safe handling** Wash hands thoroughly after handling and before eating or smoking. Wash exposed skin at the end of work shift. Do not shake clothing, rags or other items to remove dust. Dust should be removed by washing or vacuuming (with appropriate filters) the clothing, rags, or other items. Do not shake clothing to remove dust.

**Other precautions** Do not shake clothing, rags or other items to remove dust. Dust should be removed by washing or HEPA vacuuming.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers closed when not in use.

**Incompatible materials** Contact of dust with strong oxidizers may cause fire or explosions. Avoid contact with strong acids.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chromium 7440-47-3	TWA: 0.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 250 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>
Cobalt 7440-48-4	TWA: 0.02 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup> Co	TWA: 0.1 mg/m <sup>3</sup> dust and fume (vacated) TWA: 0.05 mg/m <sup>3</sup> dust and fume	IDLH: 20 mg/m <sup>3</sup> dust and fume TWA: 0.05 mg/m <sup>3</sup> dust and fume
Molybdenum 7439-98-7	TWA: 10 mg/m <sup>3</sup> inhalable fraction TWA: 3 mg/m <sup>3</sup> respirable fraction	(vacated) TWA: 10 mg/m <sup>3</sup>	IDLH: 5000 mg/m <sup>3</sup>
Nickel 7440-02-0	TWA: 1.5 mg/m <sup>3</sup> inhalable fraction	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> IDLH: 10 mg/m <sup>3</sup> Ni TWA: 0.015 mg/m <sup>3</sup> TWA: 0.015 mg/m <sup>3</sup> except Nickel carbonyl Ni
Tungsten Carbide 12070-12-1	STEL: 10 mg/m <sup>3</sup> W TWA: 5 mg/m <sup>3</sup> W	(vacated) TWA: 5 mg/m <sup>3</sup> W (vacated) STEL: 10 mg/m <sup>3</sup> W	TWA: 5 mg/m <sup>3</sup> W STEL: 10 mg/m <sup>3</sup> W

**Appropriate engineering controls**

**Engineering Controls** Use local ventilation which is adequate to limit personal exposure to airborne dust levels which do not exceed the applicable exposure limits. If such equipment is not available use respirators as specified below.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Safety glasses with side shields or goggles are recommended.

**Skin and body protection** Protective gloves or barrier creams are recommended when contact with dust or mist is likely. Prior to applying the barrier cream or use of protective gloves, wash thoroughly.

**Respiratory protection** Use an appropriate, NIOSH approved respirator if airborne dust concentrations exceed the applicable exposure limits. For proper selection of respirators, see also American National Standard Practices for Respiratory Protection Z88.2-1969. Harmful if inhaled. Dust or carbide powder can cause respiratory system damage if not protected with an approved respirator.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical state</b>	Solid	<b>Odor</b>	No Odor
<b>Appearance</b>	Dark Gray; Solid Metal	<b>Odor threshold</b>	No Odor Threshold
<b>Color</b>	Dark Gray		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No information available	
<b>Melting point/freezing point</b>	No information available	
<b>Boiling point / boiling range</b>	No information available	

Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	11.0 to 15.5
Water solubility	insoluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

**Other Information**

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	None
Density	No information available
Bulk density	No information available

**10. STABILITY AND REACTIVITY**

**Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Hazardous polymerization**      Hazardous polymerization does not occur.

**Conditions to avoid**

No information available.

**Incompatible materials**

Contact of dust with strong oxidizers may cause fire or explosions. Avoid contact with strong acids.

**Hazardous Decomposition Products**

None.

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Product Information**      **Routes of Entry:** Inhalation acute; inhalation chronic; ingestion; skin contact; eye contact.

**Inhalation** Dust from grinding can cause irritation of the nose and throat. In some cases, it also has the potential for causing or aggravating transient or permanent respiratory or pulmonary disease, including occupational asthma, pulmonary fibrosis, and interstitial pneumonitis. It is reported that cobalt indicated a lack of correlation between onset of symptoms, length of exposure and the development of interstitial fibrosis. Symptoms may include productive coughing, wheezing, shortness of breath, chest tightness, weight loss, a high incidence of minor or marked radiological abnormalities, and the development of hypersensitivity asthma in some people. Respiratory or pulmonary disease is progressive and can lead to permanent disability or death.

**Eye contact** Can cause Irritation.

**Skin Contact** May cause irritation or an allergic skin rash due to cobalt sensitization. It has been reported that an allergic dermatitis has been caused by contact with cobalt and its compounds. Certain skin conditions, such as dry skin, may be aggravated by exposure.

**Ingestion** It has been suggested that ingestion of significant amounts of cobalt has the potential for causing blood, heart and other organ problems. Current scientific information indicates no adverse effects are likely from ingestion of small amounts of nickel dust generated from these products.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Cobalt 7440-48-4	= 6170 mg/kg ( Rat )	-	> 10 mg/L ( Rat ) 1 h
Nickel 7440-02-0	> 9000 mg/kg ( Rat )	-	-

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.  
**Germ cell mutagenicity** No information available.  
**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Chromium 7440-47-3	-	Group 3	-	-
Cobalt 7440-48-4	A3	Group 2A Group 2B	Reasonably Anticipated	X
Nickel 7440-02-0	-	Group 1 Group 2B	Known Reasonably Anticipated	X
Tungsten Carbide 12070-12-1	-	Group 2A	Reasonably Anticipated	X

Cobalt metal with tungsten carbide was evaluated by IARC (International Agency for Research on Cancer) as *probably carcinogenic to humans* (Group 2A).

**Reproductive toxicity** No information available.  
**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.  
**Aspiration hazard** No information available.

**Numerical measures of toxicity - Product Information**

**Unknown Acute Toxicity** ≥50% of the mixture consists of ingredient(s) of unknown toxicity  
**The following values are calculated based on chapter 3.1 of the GHS document.**

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

≥50% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Cobalt 7440-48-4	-	100: 96 h Brachydanio rerio mg/L LC50 static	-	-
Nickel 7440-02-0	0.18: 72 h Pseudokirchneriella subcapitata mg/L EC50 0.174 - 0.311: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	100: 96 h Brachydanio rerio mg/L LC50 1.3: 96 h Cyprinus carpio mg/L LC50 semi-static 10.4: 96 h Cyprinus carpio mg/L LC50 static	-	100: 48 h Daphnia magna mg/L EC50 1: 48 h Daphnia magna mg/L EC50 Static

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes**

Dispose of in accordance with appropriate governmental regulations. May be sold as scrap or reclaim.

**Contaminated packaging**

Do not reuse container.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Chromium 7440-47-3	-	Included in waste streams: F032, F034, F035, F037, F038, F039	5.0 mg/L regulatory level	-
Nickel 7440-02-0	-	Included in waste streams: F006, F039	-	-

Chemical Name	California Hazardous Waste Status
Chromium 7440-47-3	Toxic Corrosive Ignitable
Chromium Carbide 12012-35-0	Toxic Corrosive Ignitable
Cobalt 7440-48-4	Toxic powder Ignitable powder Toxic
Molybdenum 7439-98-7	Ignitable powder
Nickel 7440-02-0	Toxic powder Ignitable powder

**14. TRANSPORT INFORMATION**

**DOT**

Not regulated

**IATA**

Not regulated

**IMDG**

Not regulated

**RID**

Not regulated

**15. REGULATORY INFORMATION**

**International Inventories**

<b>TSCA</b>	All ingredients are on the inventory or exempt from listing
<b>DSL/NDSL</b>	All ingredients are on the inventory or exempt from listing
<b>EINECS/ELINCS</b>	All ingredients are on the inventory or exempt from listing
<b>ENCS</b>	Not evaluated
<b>IECSC</b>	Not evaluated
<b>KECL</b>	All ingredients are on the inventory or exempt from listing
<b>PICCS</b>	Not evaluated
<b>AICS</b>	Not evaluated

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Chromium - 7440-47-3	1.0
Cobalt - 7440-48-4	0.1
Nickel - 7440-02-0	0.1

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Chromium 7440-47-3	-	X	X	-
Chromium Carbide 12012-35-0	-	X	-	-
Nickel 7440-02-0	-	X	X	-



**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Chromium 7440-47-3	5000 lb 10 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ RQ 10 lb final RQ
Nickel 7440-02-0	100 lb	-	RQ 4.54 kg final RQ RQ 100 lb final RQ RQ 45.4 kg final RQ

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Cobalt - 7440-48-4	Carcinogen
Nickel - 7440-02-0	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Chromium 7440-47-3	X	X	X
Chromium Carbide 12012-35-0	X	-	X
Cobalt 7440-48-4	X	X	X
Molybdenum 7439-98-7	X	X	X
Nickel 7440-02-0	X	X	X
Tungsten Carbide 12070-12-1	X	-	-

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not Applicable

Chemical Name	SARA 313 - Threshold Values %
Chromium - 7440-47-3	1.0
Cobalt - 7440-48-4	0.1
Nickel - 7440-02-0	0.1

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR

**WHMIS Hazard Class**

D2A - Very toxic materials



Non-controlled

Chemical Name	NPRI
Cobalt	X
Nickel	X

**16. OTHER INFORMATION**

Revision Date 29-Apr-2015  
Revision Note Conversion to SDS

**Disclaimer**

Although General Carbide Corporation has attempted to provide current and accurate information herein, General Carbide Corporation makes no representation regarding the accuracy of completeness of the information, and assumes no liability for any loss, damage, injury of any kind which may result from, or arise out of the use or reliance on information by any person.

<b>PREPARED BY:</b> Comprehensive Safety Compliance, Inc. (CSC) Occupational Health and Safety Consultant (412) 826-5480	<b>VERSION NO.:</b> 1	<b>APPROVAL DATE:</b> 4/29/15
<b>MFR. CONTACT:</b> General Carbide Corporation 1151 Garden Street Greensburg, PA 15601	<b>SUPERSEDES MSDS DATED:</b> 5/21/2012	

**End of Safety Data Sheet**