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Revision Number 1

## 1. Identification of the substance/preparation and of the Company/undertaking

### Product Identifier

**Product Type** Welding powder  
**Product name** **Stelcar 9120 / JK120 powder**  
**Product code** KSPC1015-1

**Type** Powder

### Other means of identification

**UN/ID no** UN3077

**Synonyms** No information available

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

**Recommended Use** Industrial Manufacturing (all), Service life, cobalt and/or nickel containing alloys, steels, prefabricated parts and tools, Industrial use, Professional use, Wear and Corrosion Resistant Welding Consumable, Wear and Corrosion Resistant Components, Metallurgical Products, For use in industrial installations only

**Uses advised against** Consumer use.

### Details of the Supplier of the Safety Data Sheet

#### Emergency Telephone Number

**Emergency Telephone Number** CHEMTREC: +1-703-527-3887 (INTERNATIONAL)  
1-800-424-9300 (NORTH AMERICA)

**NRC (National Response Center)** USA, Poison Centres +1 800 222 1222  
Canada, IWK Regional Poison Center +1 902 470 8161 or 1 800 565 8161

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## 2. Hazards Identification

### Classification

Serious eye damage/eye irritation	Category 2
Respiratory sensitization	Category 1B
Skin sensitization	Category 1
Carcinogenicity	Category 1B
Reproductive Toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

### Label Elements

## Emergency Overview

## DANGER

### Hazard Statements

Harmful if swallowed. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause cancer by inhalation. May cause an allergic skin reaction. May damage fertility. Causes damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.  
Heating may cause a fire.



### 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. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wear respiratory protection. In case of inadequate ventilation wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace.

### Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention Specific treatment is urgent (see supplemental first aid instructions on this label) **Eyes** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. **Skin** 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. **Inhalation** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. **Ingestion** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

### Precautionary Statements - Storage

Store locked up. Store in a well-ventilated place. Keep container tightly closed.

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

**Appearance** metallic Powder

**Physical State @20°C** solid

**Odor** none

### Hazards not otherwise classified (HNOC)

#### **Welding Hazards**

CAUTION. Welding will create fumes which may be toxic. If welding is performed on plated or coated materials such as galvanised or painted steel, excessive fume may be produced which contains additional hazardous components, and may result in metal fume fever or other health effects. The product and work surface will be hot during and after welding. Electric shock can kill. Arc Rays can injure eyes and burn skin.

#### **Other Hazards**

May be harmful if swallowed. Causes mild skin irritation.

#### **Unknown Aquatic Toxicity**

37.65% of the mixture consists of ingredient(s) of unknown toxicity

## 3. Composition/Information on Ingredients

Chemical name	Formula	CAS-No	weight-%	GHS Classification
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Tungsten carbide	WC	12070-12-1	> 50	Not classified
Cobalt	Co	7440-48-4	5 - 10	Acute Oral 4 (H302) Acute dust/mist 1 (H330) Eye damage 2 (H319) Resp. Sens. 1B (H334) Skin Sens. 1 (H317) Carc. 1B (H350) Inhalation Repr. tox 2 (H361)Fertility Aquatic Acute 1 M=10(H400) Aquatic Chronic 1 M=1(H410)
Chromium	Cr	7440-47-3	3 - 5	Not classified
Iron	Fe	7439-89-6	0.1 - 1	Not classified

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

**Full text of H-Statements referred to under sections 2 and 3**

H302 - Harmful if swallowed  
H317 - May cause an allergic skin reaction  
H319 - Causes serious eye irritation  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H350i - May cause cancer by inhalation  
H361f - Suspected of damaging fertility  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects

## 4. First aid measures

### FIRST AID MEASURES

**General advice**

If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**Eye Contact**

Keep eye wide open while rinsing. If symptoms persist, call a physician. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

**Skin contact**

Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash off immediately with soap and plenty of water.

**Inhalation**

Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Oxygen or artificial respiration if needed. Get medical attention. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

**Ingestion**

Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician. Rinse mouth.

**Self-protection of the first aider**

Self-protection of the first aider. Wear suitable gloves.

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

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

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.

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

**Notes to Physician**

Treat symptomatically. May cause sensitization by inhalation and skin contact. May cause sensitization of susceptible persons.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Extinguishing media which must not be used for safety reasons</b>	none.
<b>Specific hazards arising from the chemical</b>	Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes Thermal decomposition can lead to release of irritating and toxic gases and vapors May cause sensitization by inhalation and skin contact Carbon oxides
<b>Protective equipment and precautions for firefighters</b>	Use personal protective equipment as required In the event of fire, wear self-contained breathing apparatus

### Component Information

Chemical name	Extinguishing Media for Fires (Suitable)	Extinguishing Media for Fires (Unsuitable)
Chromium	Use extinguishing media appropriate for surrounding fire.	Do not use carbon dioxide, which may form an explosive mixture with powdered chromium.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	See Section 12 for additional Ecological Information.
<b>Environmental precautions</b>	Avoid release to the environment.
<b>Methods and material for containment and cleaning up</b>	Pick up and transfer to properly labeled containers. Avoid generation of dust. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust.

## 7. Handling and Storage

<b>Precautions for safe handling</b>	Do not eat, drink or smoke when using this product. Use personal protective equipment as required. Avoid contact with eyes, skin and clothing. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray.
<b><u>Conditions for safe storage, including any incompatibilities</u></b>	
<b>Storage</b>	Keep out of the reach of children. Keep container tightly closed in a dry and well-ventilated place. Keep containers tightly closed in a cool, well-ventilated place.
<b>Incompatible products</b>	None known based on information supplied.
<b>Specific use(s)</b>	Welding. .

## 8. Exposure Controls/Personal Protection

### Control parameters

Chemical name	Exposure Guidelines				
	USA - ACGIH TLV	USA - OSHA PEL	USA - NIOSH IDLH	Argentina	Brazil
Tungsten carbide	3 mg/m <sup>3</sup> TWA (respirable particulate matter, as W); TLV basis: lung damage	-	-	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>	-
Carbide, containing tungsten carbide and cobalt	0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as Co)	-	-	-	-

	3 mg/m <sup>3</sup> TWA (respirable particulate matter, as W); TLV basis: lung damage				
Cobalt	0.02 mg/m <sup>3</sup> TWA	0.1 mg/m <sup>3</sup> TWA (dust and fume)	20 mg/m <sup>3</sup> IDLH (dust and fume)	TWA: 0.02 mg/m <sup>3</sup>	-
Chromium	0.5 mg/m <sup>3</sup> TWA	1 mg/m <sup>3</sup> TWA	250 mg/m <sup>3</sup> IDLH	TWA: 0.5 mg/m <sup>3</sup>	-
<b>Chemical name</b>	<b>Canada - Alberta</b>	<b>Canada - British Columbia</b>	<b>Canada - Ontario</b>	<b>Canada - Quebec</b>	<b>Canada - Manitoba</b>
Tungsten carbide	-	-	-	-	5 mg/m <sup>3</sup> TWA (as W) 0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as Co)
Carbide, containing tungsten carbide and cobalt	-	-	-	-	0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as Co)
Cobalt	0.02 mg/m <sup>3</sup> TWA	0.02 mg/m <sup>3</sup> TWA	0.02 mg/m <sup>3</sup> TWA	0.02 mg/m <sup>3</sup> TWA EV	0.02 mg/m <sup>3</sup> TWA 0.02 mg/m <sup>3</sup> TWA (as Co) 0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as Co)
Chromium	0.5 mg/m <sup>3</sup> TWA	0.5 mg/m <sup>3</sup> TWA	0.5 mg/m <sup>3</sup> TWA	0.5 mg/m <sup>3</sup> TWA EV	0.5 mg/m <sup>3</sup> TWA
<b>Chemical name</b>	<b>Chile</b>	<b>Colombia - OEL</b>	<b>Mexico OEL (TWA)</b>	<b>Nicaragua</b>	<b>Peru</b>
Tungsten carbide	-	5 mg/m <sup>3</sup> TWA (as W) 0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as Co) 10 mg/m <sup>3</sup> STEL (as W)	-	5 mg/m <sup>3</sup> TWA (as W) 0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as as Co)	-
Carbide, containing tungsten carbide and cobalt	-	0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as Co)	-	0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as as Co)	-
Cobalt	TWA: 0.016 mg/m <sup>3</sup>	0.02 mg/m <sup>3</sup> TWA 0.02 mg/m <sup>3</sup> TWA (as Co) 0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as Co)	0.1 mg/m <sup>3</sup> TWA LMPE-PPT (dust and fume, as Co)	0.02 mg/m <sup>3</sup> TWA 0.02 mg/m <sup>3</sup> TWA (as Co) 0.005 mg/m <sup>3</sup> TWA (thoracic fraction, as as Co)	0.02 mg/m <sup>3</sup> TWA
Chromium	TWA: 0.4 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup> TWA	0.5 mg/m <sup>3</sup> TWA LMPE-PPT	0.5 mg/m <sup>3</sup> TWA	-
<b>Chemical name</b>	<b>Uruguay</b>	<b>Venezuela</b>	<b>...</b>	<b>...</b>	<b>...</b>
Tungsten carbide	-	STEL: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	-	-	-
Carbide, containing tungsten carbide and cobalt	0.005 mg/m <sup>3</sup> TWA (inhalable fraction)	-	-	-	-
Cobalt	0.02 mg/m <sup>3</sup> TWA	TWA: 0.02 mg/m <sup>3</sup>	-	-	-
Chromium	0.5 mg/m <sup>3</sup> TWA	TWA: 0.5 mg/m <sup>3</sup>	-	-	-

**Other Exposure Guidelines** Hexavalent Chrome may be formed during welding.

Chemical name	Derived No Effect Level (DNEL)	Predicted No Effect Concentration (PNEC)
Tungsten carbide	6.2 mg/m <sup>3</sup> systemic inhalation	Tungsten 0.338 mg/l freshwater; 0.0338 mg/l marine water; 2.17 mg/kg soil; 11 mg/kg food
Cobalt	0.04 mg/m <sup>3</sup> long term local inhalation	2.36 µg Co/l (AF 3) marine water; 0.74 µg/l (AF 3) fresh water
Chromium	0.5 mg/m <sup>3</sup> local inhalation	-
Iron	3 mg/m <sup>3</sup> local inhalation	-

### Appropriate engineering controls

**Engineering controls**

- Showers
- Eyewash stations
- Ventilation systems.

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

**Eye Protection** Use suitable eye protection to guard against the effects of welding. Wear safety glasses with side shields (or goggles). Eye-irrigation bottle with pure water.

**Skin Protection** Long sleeved clothing. Wear fire/flammable resistant/retardant clothing. Wear impervious gloves and/or clothing if needed to prevent contact with the material. Gloves should be replaced regularly and if there is any sign of damage to the glove material.

**Hand Protection** Protective gloves. The product and work surface will be hot during and after welding. Ensure adequate protection is in place to stop individuals from burning themselves.

**Respiratory protection** Use only with adequate ventilation. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. If exposure limits are likely to be exceeded or if irritation or other symptoms are experienced, NIOSH/MSHA or EN 136 approved respiratory protection should be worn.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Keep away from food, drink and animal feeding stuffs. Avoid contact with skin, eyes and clothing. Wash hands before breaks and at the end of workday. Keep working clothes separately.

## Biological standards

Chemical name	USA ACGIH -BEI	Argentina - Occupational Exposure Limits - Biological Exposure Indices (BEIs)	Chile - Occupational Exposure Limits - Biological Exposure Indices (BEIs)
Carbide, containing tungsten carbide and cobalt	Medium: urine Time: end of shift at end of workweek Parameter: Cobalt (nonquantitative, nonspecific)	-	-
Cobalt	15 µg/L Medium: urine Time: end of shift at end of workweek Parameter: Cobalt (nonspecific)	15 µg/L urine end of shift on the last day of workweek Co (Background); 1 µg/L blood end of shift on the last day of workweek Co (Background, semi-quantitative)	-
Chromium	-	-	30 µg/g Creatinine Medium: urine Time: end of shift and at end of workweek Parameter: Chromium
Chemical name	Mexico - Occupational Exposure Limits - BEIs (IBE)	Venezuela - Biological Exposure Indices (BEIs)	...
Cobalt	15 µg/L Medium: urine Time: end of shift at end of work week Parameter: Cobalt (background); 1 µg/L Medium: blood Time: end of shift at end of work week Parameter: Cobalt (background, semi-quantitative)	15 µg/L urine end of shift at end of workweek Cobalt (F); 1 µg/L urine end of shift at end of workweek Cobalt (F,Sc)	-

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

<b>Physical State @20°C</b>	solid	<b>Appearance</b>	metallic, Powder
<b>Odor</b>	none	<b>Melting point / melting range</b>	1285-1395 °C / 2340-2540 °F
<b>flash point</b>	not applicable	<b>Vapor Pressure</b>	not applicable
<b>Vapor Density</b>	not applicable	<b>Water solubility</b>	Insoluble in water
<b>Dynamic viscosity</b>	solid	<b>Density VALUE</b>	8.44 g/cm <sup>3</sup>
<b>Explosive properties</b>	Hardmetal WC-Co (50µm); Lower explosion limit 750 g/cm <sup>3</sup> ,		

max explosion pressure 4.3 bar,  
Kst value 16 bar\*m/s St1,  
ignition temperature 500°C,  
minimum ignition energy < 10  
000 mJ

## 9.2. Other information

VOC Content (%)

Not Applicable

## Component Information

Chemical name	Mol. Weight	Water Solub.	Vap. Press.	Vap. Dens.	pH Val.	Autoign. Temp.	Evap. Rate	Boil. Temp.
Cobalt	58.93 g/mol	-	0.00007 hPa at 1050 °C	-	-	-	-	2870 °C
Chromium	51.99 g/mol	-	-	-	-	-	-	2642 °C
Iron	55.84 g/mol	-	0.000001 hPa at 25 °C	-	-	>100 °C	-	-
Chemical name	Density VALUE	Melt. Temp.	Flash Point	Water Sol.	Bulk Dens.	Odor	State	color
Tungsten carbide	15.63 g/cm3 at 18 °C	-	-	-	<9.2 kg/m <sup>3</sup> (ASTM B329)	-	-	-
Cobalt	8.85 - 8.9 g/cm3 at 20 °C	<1495 °C	-	insoluble	-	-	-	-
Chromium	7.19 g/cm3 at 20 °C	1900 °C	-	insoluble	-	-	-	grey
Iron	7.87 g/cm3 at 25 °C	1539 °C	-	insoluble	3000 - 4000 kg/m <sup>3</sup>	-	-	-

## 10. Stability and Reactivity

### Reactivity

Stable under normal conditions

### Chemical stability

Stable under normal conditions.

### Possibility of Hazardous Reactions

None under normal processing.

### Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

### incompatible materials

Acids. Strong oxidizing agents.

### Hazardous decomposition products

Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

## 11. Toxicological Information

### Information on likely routes of exposure

### Product Information

#### Inhalation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### Eye Contact

May cause eye irritation with susceptible persons.

#### Skin contact

Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Prolonged contact may cause redness and irritation. Prolonged skin contact may defat the skin and produce dermatitis. May cause sensitization by skin contact.

#### Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may cause irritation to mucous membranes.

Chemical name	Oral LD50	dermal LD50	Inhalation LC50
Tungsten carbide	> 2000 mg/kg bw (OECD 401)	> 2000 mg/kg bw (OECD 402)	> 5.3 mg/L (4h) (OECD 403)

Carbide, containing tungsten carbide and cobalt	-	-	Lowest reported LC50(4h) for waxed 10% Co 0.4 mg/l Lowest reported LC50(4h) for non-lubricated 10% Co 0.24 mg/l
Cobalt	550 mg/kg bw	>2000 mg/kg bw	0.05 mg/L
Chromium	LD50 >5000 mg/kg bw	Data waiving - Study Scientifically Unjustified	LC50 >5.41 mg/L air (analytical)
Iron	= 984 mg/kg ( Rat )	-	-

### Information on toxicological effects

Chemical name	US ACGIH - Critical effects
Carbide, containing tungsten carbide and cobalt	pneumonitis respiratory sensitizer
Cobalt	asthma; myocardial effects; pulmonary function
Chromium	skin and upper respiratory tract irritation

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

**Irritation** Repeated exposure may cause skin dryness or cracking.

**Sensitization** May cause sensitization of susceptible persons.

**MUTAGENIC EFFECTS** None known.

**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical name	ACGIH	IARC	NTP: (National Toxicity Program)	OSHA
Tungsten carbide	A2 - Suspected Human Carcinogen	-	-	-
Carbide, containing tungsten carbide and cobalt	A2 - Suspected Human Carcinogen	Group 2A - Probably carcinogenic to humans	Reasonably Anticipated To Be A Human Carcinogen (hard metals; powder) Present (see RoC monograph for specific cobalt compounds, listed under Cobalt and certain cobalt compounds)	Present
Cobalt	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans A2 - Suspected Human Carcinogen	Group 2B - Possible Human Carcinogen	Printed Long-Term and Short-Term Study Reports: Long-Term Studies 16 Male Rat - Clear Evidence; Female Rat - Clear Evidence; Male Mice - Clear Evidence; Female Mice - Clear Evidence (TR-581) Present (includes nanoparticles, listed under Cobalt and certain cobalt compounds) Present (see RoC monograph for specific cobalt compounds, listed under Cobalt and certain cobalt compounds)	Not Listed
Chromium	A4 - Not Classifiable as a Human Carcinogen	Group 3 - Not Classified as a Human Carcinogen	Long-Term Exposure Studies for Which Technical Reports Were Not Prepared 17	Not Listed
Iron	-	-	Present (excess or overload)	-
<b>Chemical name</b>	<b>Chile</b>	<b>Argentina</b>	<b>Venezuela</b>	<b>Peru</b>



Cobalt	A3 - Animal Carcinogen	A3 - Confirmed animal carcinogen with unknown relevance to humans	Present	-
Chromium	A4 - Not Classifiable as a Human Carcinogen	A4 - Not classifiable as a human carcinogen	Present	-
<b>Chemical name</b>	<b>Canada Alberta</b>	<b>Canada British Coloumbia</b>	<b>Canada Manitoba</b>	<b>Canada Quebec</b>
Tungsten carbide	-	-	A2 Suspected Human Carcinogen	-
Carbide, containing tungsten carbide and cobalt	-	-	A2 Suspected Human Carcinogen	-
Cobalt	-	IARC Category 2B - Possible Human Carcinogen	A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans A2 Suspected Human Carcinogen	C3 carcinogen - effect detected in animals
Chromium	-	-	A4 Not Classifiable as a Human Carcinogen	-

**Reproductive toxicity**  
**Chronic toxicity**

Contains a known or suspected reproductive toxin.  
 Prolonged exposure may cause chronic effects. Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. Contains a known or suspected reproductive toxin. This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

**Target organ effects**

blood, Central Vascular System (CVS), Eyes, Lungs, Nasal Cavities, respiratory system, Skin.

**Numerical measures of toxicity** No data available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 508 mg/kg  
 ATEmix (dermal) 5 mg/kg  
 ATEmix (inhalation-gas) 10 mg/l

## 12. Ecological Information

**12.1. Ecotoxicity** 96% of the mixture consists of component(s) of unknown hazards to the aquatic environment

**12.2 Persistence and degradability** Product/Substance is inorganic. not applicable.

**12.3 Bioaccumulative potential** No information available.

**12.5 Results of PBT and vPvB assessment** The components in this formulation do not meet the criteria for classification as PBT or vPvB

**12.6 Other adverse effects** None known

## 13. Disposal Considerations

**Waste treatment methods** It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations. It is the responsibility of the waste generator to determine the toxicity and



**Waste from residues/unused products** physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Reuse or recycle. Recover or recycle if possible. Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.

**California Waste Status** This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Carbide, containing tungsten carbide and cobalt	Toxic
Cobalt	Toxic Ignitable
Chromium	Toxic Corrosive Ignitable

## 14. Transport Information

**DOT** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COBALT), 9, III, Marine pollutant

<b>UN/ID no</b>	UN3077	<b>Hazard Class</b>	9
<b>Packing group</b>	III	<b>Packaging Exceptions</b>	155
<b>Bulk packaging</b>	240	<b>Non-bulk Packaging</b>	213
<b>Quantity Limit for Passenger Air/Rail</b>	No limit	<b>Quantity Limit for Cargo Air Only</b>	No limit
<b>Special Provisions</b>	146, 335, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33, 8	<b>Emergency Response Guide Number</b>	171
<b>DOT note</b>	This material is not regulated by the U.S. DOT as a 'hazardous material' when transported in non-bulk packaging via motor vehicle, railcar, or aircraft in the United States.		

Chemical name	U.S. - DOT Reportable Quantities	DOT Marine Pollutant	DOT Severe Marine pollutant
Chromium	5000 lbs RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).); 2270 kg RQ (The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm (0.004 inches).)	-	-

**TDG** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COBALT), 9, III, Marine pollutant

<b>UN/ID no</b>	UN3077	<b>Hazard Class</b>	9
<b>Packing group</b>	III		

**MEX** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COBALT), 9, III

<b>UN/ID no</b>	UN3077	<b>Hazard Class</b>	9
<b>Packing group</b>	III	<b>Special Provisions</b>	274, 331, 335

**IMO / IMDG** UN3077, Environmentally hazardous substance, solid, n.o.s. (Cobalt), 9, III, Marine Pollutant

<b>UN Number</b>	UN3077	<b>Hazard Class</b>	9
<b>Packing group</b>	III	<b>Excepted Quantity (EQ)</b>	E1
<b>Limited Quantity (LQ)</b>	5 kg	<b>Special Provisions</b>	274, 335, 966, 967
<b>NR</b>	9	<b>EmS No.</b>	F-A, S-F

**ICAO / IATA-DGR** UN3077, Environmentally hazardous substance, solid, n.o.s. (Cobalt), 9, III

<b>UN Number</b>	UN3077	<b>Hazard Class</b>	9
<b>Packing group</b>	III	<b>Excepted Quantity (EQ)</b>	E1
<b>Limited Quantity (LQ)</b>	30 kg G	<b>Maximum Quantity for Cargo Only</b>	400 kg
<b>Maximum Quantity for Passenger</b>	400 kg	<b>IATA Limited Quantity Packaging Instructions</b>	Y956
<b>IATA Passenger Instructions</b>	956	<b>IATA Cargo Instructions</b>	956
<b>ERG Code</b>	9L	<b>IATA special provisions</b>	A158, A179, A97, A197

### Special Packaging Provisions for ALL Legislations

- [DOT - 146]: This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in section 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority. This provision may be used for both domestic and international shipments.
- [DOT - 335]: Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as Environmentally hazardous substances, solid, n.o.s., UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leakproof when used as bulk packaging.
- [DOT - 8]: A hazardous substance that is not a hazardous waste may be shipped under the shipping description Other regulated substance, liquid or solid, n.o.s. , as appropriate. In addition, for solid materials, special provision B54 applies.
- [ADR - 274]: The provisions of 3.1.2.8 apply.
- [ADR - 335]: Mixtures of solids which are not subject to the requirements of ADR and environmentally hazardous liquids or solids shall be classified as UN 3077 and may be carried under this entry provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or vehicle or container is closed. Each vehicle or container shall be leakproof when used for carriage in bulk. If free liquid is visible at the time the mixture is loaded or at the time the packaging or vehicle or container is closed, the mixture shall be classified as UN 3082. Sealed packets and articles containing less than 10 ml of an environmentally hazardous liquid, absorbed into a solid material but with no free liquid in the packet or article, or containing less than 10 g of an environmentally hazardous solid, are not subject to the requirements of ADR.
- [IATA - A158]: Mixtures of solids which are not subject to these Regulations and liquids or solids classified by the shipper as environmentally hazardous substances (UN3077 and UN3082) may be transported under this entry, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging is closed. Sealed packets and articles containing less than 10 mL of an environmentally hazardous liquid, absorbed into a solid material but with no free liquid in the packet or article, or containing less than 10 g of an environmentally hazardous solid, are not subject to these Regulations.
- [IATA - A97]: These entries may be used for substances which are hazardous to the environment but do not meet the classification criteria of any other class or other substance within Class 9. This must be based on the criteria as indicated in 3.9.2.4. This designation may also be used for wastes not otherwise subject to these Regulations but which are covered under the Basle Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
- [RID - 274]: The provisions of 3.1.2.8 apply.
- [ADG - 179]: This designation must be used for substances and mixtures which are dangerous to the aquatic environment or which are marine pollutants that do not meet the classification criteria of any other Class or another substance within Class 9. This designation may also be used for wastes not otherwise subject to this Code but which are covered under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and for substances designated to be environmentally hazardous substances by the competent authority of the country or state of origin, transit or destination which do not meet the criteria for an environmentally hazardous substances according to this Code or for any other hazard Class.
- [ADG - 274]: For the purposes of documentation and packaging marking, the proper shipping name must be supplemented with the technical name (see 3.1.2.8).
- [ADG - 331]: For environmentally hazardous substances meeting the criteria of 2.9.3, an additional mark as specified in 5.2.1.7 and 5.3.2.3 must be applied, subject to Special Provisions AU01 in 3.3.3.
- [ADG - 335]: Mixtures of solids which are not subject to this Code and environmentally hazardous liquids or solids must be classified as UN 3077 and may be transported under this entry, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leakproof when used as a bulk packaging. Sealed packets and articles containing less than 10 ml of an environmentally hazardous liquid, absorbed into a solid material but with no free liquid in the packet or article, or containing less than 10 g of an environmentally hazardous solid, are not subject to this Code. (See also SP AU01)
- [ADG - AU01]: Environmentally Hazardous Substances meeting the description of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in: (a) packagings; (b) IBCs; or (c ) any other receptacle not exceeding 500 kg (L).
- [CHINA - 274]: For the purpose of documentation and package marking, the proper shipping name shall be supplemented with the technical name (see 3.1.2.8).
- [CHINA - 331]: For environmentally hazardous substances meeting the criteria of 2.9.3, an additional mark as specified in 5.2.1.6 and 5.3.2.3 shall be applied.
- [CHINA - 335]: Mixtures of solids which are not subject to these Regulations and environmentally hazardous liquids or solids shall be classified as UN 3077 and may be transported under this entry, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or transport unit is closed. Each transport unit shall be leakproof when used as a bulk packaging. Sealed packets and articles containing less than 10 ml of an environmentally hazardous liquid, absorbed into a solid material but with no free liquid in the packet or article, or containing less than 10 g of an environmentally hazardous solid, are not subject to these Regulations.
- [IMDG - 274]: For the purposes of documentation and package marking, the Proper Shipping Name shall be supplemented with the technical name (see 3.1.2.8.1).
- [IMDG - 335]: Mixtures of solids which are not subject to the provisions of this Code and environmentally hazardous liquids assigned to UN 3082 may be classified and transported as UN 3077, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. If free liquid is visible at the time the mixture is loaded or at the time the packaging or cargo transport unit is closed, the mixture shall be classified as UN 3082. Each cargo transport unit shall be leakproof when used as a bulk container. Sealed packets and articles containing less than 10 ml of an environmentally hazardous liquid assigned to UN 3082, absorbed into a solid material but with no free liquid in the packet or article, or containing less than 10 g of an environmentally hazardous solid assigned to UN 3077, are not subject to the provisions of this Code.

## 15. Regulatory Information

Chemical name	TSCA
Tungsten carbide	Present
Cobalt	Present Effective 06/01/1987, Sunset 06/01/1997 Added 2012
Chromium	Present Added 2012
Iron	Present
Chemical name	Bolivia - hazardous substances regulated under Bolivia's Environmental Regulations for the Industrial Manufacturing Sector
Cobalt	Present

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

### U.S. Federal Regulations

Chemical name	CAS-No	weight-%	SARA 313 - Threshold Values %
Tungsten carbide	12070-12-1	> 50	-
Cobalt	7440-48-4	5 - 10	Present
Chromium	7440-47-3	3 - 5	Present
Iron	7439-89-6	0.1 - 1	-

### SARA 311/312 Hazard Categories

Acute health hazard	yes
Chronic Health Hazard	yes
Fire Hazard	no
Sudden release of pressure hazard	no
Reactive Hazard	no

### 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	Not Applicable	Present	Present	Not Applicable

### 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	Extremely Hazardous Substances RQs	RQ
Chromium	5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)	-	5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

### U.S. State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical name	California - Proposition 65 - Carcinogens List	California - Proposition 65 - Developmental Toxicity	California - Proposition 65 - Reproductive Toxicity	California - 22 CCR - Toxic and Extremely Hazardous

				Carcinogenic Wastes
Cobalt	carcinogen, 7/1/1992 (powder)	-	-	-

**California Prop. 65** . WARNING. This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm. Additional information available from: . www.P65Warnings.ca.gov.

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

Chemical name	New Jersey	Massachusetts	Pennsylvania
Tungsten carbide	sn 1960	-	-
Cobalt	sn 0520	Present	Environmental hazard; Present (fume) Present
Chromium	sn 0432	Carcinogen; Extraordinarily hazardous	Environmental hazard; Special hazardous substance Present

### CANADA

#### WHMIS Statement

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

Chemical name	WHMIS Classifications of Components
Cobalt	D2A, D2B
Chromium	Uncontrolled product according to WHMIS classification criteria
Iron	Uncontrolled product according to WHMIS classification criteria

## 16. Other Information

### Global Automotive Declarable Substance List Classifications

Chemical name	Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thresholds
Cobalt	Declarable Substance (FI)	0.1 %

<b>NFPA</b>	Health hazard 2	Flammability 0	Instability 0	Physical and Chemical Hazards -
<b>HMIS</b>	Health hazard 2	Flammability 0	Physical hazards 0	Personal precautions -

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**Revision Date** 2015-09-03

**Revision Note** No information available

#### Disclaimer

Kennametal urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDS's obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

End of Safety Data Sheet