Safety Data Sheet

Issuing Date 2015-02-06 **Revision Date** 2015-12-14 **Revision Number** 1

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

Product Identifier

Product Type Welding powder
Product name **Stelcar 9672 / JK112 powder**
Product code KSPC1008-6

Other means of identification

UN-No UN3077

Synonyms No information available

Recommended use of the chemical and restrictions on use

Recommended Use Wear and Corrosion Resistant Welding Consumable. For use in industrial installations only.

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

Prepared by Kennametal Inc. 1600 Technology Way Latrobe, PA 15650, USA
E-mail k-corp-product.safety@kennametal.com

2. Hazards Identification

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
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** 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 injur eyes and burn skin.

Other Hazards May be harmful if swallowed. Causes mild skin irritation.

Unknown Aquatic Toxicty 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
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 (H350i) Repr. tox 2 (H361f) Aquatic Acute 1 M=10(H400)

				Aquatic Chronic 1 M=1(H410)

* 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
Lungs
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. CNS and psychiatric effects, Parkinson-like symptoms. Languor, sleepiness and weakness in legs. A stolid masklike appearance of face, emotional disturbances such as uncontrollable laughter and spastic gait with tendency to fall in walking and findings in more advanced cases. 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

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must

none.

not be used for safety reasons

Specific hazards arising from the chemical 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

Protective equipment and precautions for firefighters Use personal protective equipment as required In the event of fire, wear self-contained breathing apparatus

Component Information

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions See Section 12 for additional Ecological Information.

Environmental precautions Avoid release to the environment.

Methods and material for containment and cleaning up 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

Precautions for safe handling 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.

Conditions for safe storage, including any incompatibilities

Storage 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.

Incompatible products None known based on information supplied.

Specific use(s) Welding. .

8. Exposure Controls/Personal Protection

Control parameters

Exposure Guidelines Exposure Guidelines

Chemical name	USA - ACGIH TLV	USA - OSHA PEL	USA - NIOSH IDLH	Argentina	Brazil
Tungsten carbide	-	-	-	TWA: 5 mg/m³ STEL: 10 mg/m³	-
Cobalt	0.02 mg/m³ TWA	0.1 mg/m³ TWA (dust and fume)	20 mg/m³ IDLH (dust and fume)	TWA: 0.02 mg/m³	-
Chemical name	**Canada - Alberta**	**Canada - British Columbia**	**Canada - Ontario**	**Canada - Quebec**	**Canada - Manitoba**
Tungsten carbide	-	-	-	-	5 mg/m³ TWA (as W)
Cobalt	0.02 mg/m³ TWA	0.02 mg/m³ TWA	0.02 mg/m³ TWA	0.02 mg/m³ TWAEV	0.02 mg/m³ TWA 0.02 mg/m³ TWA (as Co)
Chemical name	**Chile**	**Mexico OEL (TWA)**	**Peru**	**Uruguay**	**Venezuela**
Tungsten carbide	-	-	-	-	STEL: 10 mg/m³ TWA: 5 mg/m³
Cobalt	TWA: 0.016 mg/m³	0.1 mg/m³ TWA LMPE-PPT (dust and fume, as Co)	0.02 mg/m³ TWA	0.02 mg/m³ TWA	TWA: 0.02 mg/m³

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/m³ 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/m³ long term local inhalation	2.36 µg Co/l (AF 3) marine water; 0.74 µg/l (AF 3) fresh water

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/flame resistant/retardant clothing. Apron. Wear suitable protective clothing. Wear suitable gloves.

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.

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.

Biological standards

Chemical name	USA ACGIH -BEI	Argentina - Occupational Exposure Limits - Biological Exposure Indices (BEIs)	Chile - Occupational Exposure Limits - Biological Exposure Indices (BEIs)
Cobalt	15 µg/L Medium: urine Time: end of shift at end of workweek Parameter: Cobalt (background); 1 µg/L Medium: blood Time: end of shift at end of workweek Parameter: Cobalt (background, semi-quantitative)	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)	-
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)	-

9.1 Information on basic physical and chemical properties

Physical State	solid	**Appearance**	metallic, Powder
Odor	none	**Melting point / melting range**	1285-1395 °C / 2340-2540 °F
flash point	not applicable	**Vapor Pressure**	not applicable
Vapor Density	not applicable	**Water solubility**	Insoluble in water
Dynamic viscosity	solid	**Density**	8.44 g/cm3
Explosive properties	Hardmetal WC-Co (50µm);		

Lower explosion limit 750 g/cm³, 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
Chemical name	**Density**	**Melt. Temp.**	**Flash Point**	**Water Sol.**	**Bulk Dens.**	**Odor**	**State**	**color**
Tungsten carbide	15.63 g/cm3 at 18 °C	-	-	-	<9.2 kg/m³ (ASTM B329)	-	-	-
Cobalt	8.85 - 8.9 g/cm3 at 20 °C	<1495 °C	-	soluble	-	-	-	-

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)
Cobalt	550 mg/kg bw	>2000 mg/kg bw	0.05 mg/L

Information on toxicological effects

Chemical name	US ACGIH - Critical effects
Cobalt	asthma; myocardial effects; pulmonary function

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
Cobalt	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans	Group 2B - Possible Human Carcinogen	Post Peer Review Technical Reports in Progress 16 (Long-Term Studies) Male Rat - Clear Evidence; Female Rat - Clear Evidence; Male Mice - Clear Evidence; Female Mice - Clear Evidence (TR-581)	Not Listed

Chemical name	Chile	Argentina	Venezula	Peru
Cobalt	A3 - Animal Carcinogen	A3 - Confirmed animal carcinogen with unknown relevance to humans	Present	-

Reproductive toxicity Contains a known or suspected reproductive toxin.

Chronic toxicity Prolonged exposure may cause chronic effects. CNS and psychiatric effects, Parkinson-like symptoms. Languor, sleepiness and weakness in legs. A stolid masklike appearance of face, emotional disturbances such as uncontrollable laughter and spastic gait with tendency to fall in walking and findings in more advanced cases. 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. Repeated or prolonged exposure may cause central nervous system damage. 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 nervous system (CNS), Central Vascular System (CVS), Eyes, kidney, liver, Lungs, Nasal Cavities, respiratory system, Skin.

Neurological effects Repeated or prolonged exposure may cause central nervous system damage. Prolonged or excessive exposure to manganese in dust or fume may cause irreversible central nervous system damage (Manganism). Symptoms resemble Parkinson's disease and include tremors, impaired speech, mask like face and impaired movement.

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

This product contains a chemical which is listed as a marine pollutant according to DOT.

12.1. Ecotoxicity 96% of the mixture consists of components(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 physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Waste from residues/unused products 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
Cobalt	Toxic Ignitable

14. Transport Information

DOT &UN3077, &(Cobalt), 9, III

UN-No	UN3077	**Hazard Class**	9
Packing group	III	**Packaging Exceptions**	155
Bulk packaging	240	**Non-bulk Packaging**	213
Quantity Limit for Passenger Air/Rail	No limit	**Quantity Limit for Cargo Air Only**	No limit
Special Provisions	8, 146, B54, IB8, IP3, N20, T1, TP33	**Emergency Response Guide Number**	171

TDG UN3077, Environmentally hazardous substance, solid, n.o.s(Cobalt), 9, III

UN-No	UN3077	**Proper shipping name**	Environmentally hazardous substance, solid, n.o.s
Hazard Class	9	**Packing group**	III

MEX UN3077, Environmentally hazardous substance, solid, n.o.s(Cobalt), 9, III

UN-No	UN3077	**Proper shipping name**	Environmentally hazardous substance, solid, n.o.s
Hazard Class	9	**Packing group**	III
Limited quantity	5 kg		

IMO / IMDG &UN3077, & (Cobalt), 9, III

UN number	UN3077	**Transport Hazard Class**	9
Packing Group	III	**Limited quantity**	5 kg
Special Provisions	179, 274, 335, 909	**EmS No.**	F-A, S-F

ICAO / IATA-DGR &UN3077, &(Cobalt), 9, III

UN number	UN3077	**Transport Hazard Class**	9
Packing group	III	**Limited Quantity**	30 kg G
Maximum Quantity for Cargo Only	400 kg	**Maximum Quantity for Passenger**	400 kg
ERG Code	9L		

15. Regulatory Information

Chemical name	**TSCA**
Tungsten carbide	Present
Cobalt	Present Effective 06/01/1987, Sunset 06/01/1997
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

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)

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)

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, initial date 7/1/92 (powder)	-	-	-

U.S. State Right-to-Know Regulations

Chemical name	**New Jersey**	**Massachusetts**	**Pennsylvania**

Tungsten carbide	sn 1960	-	-
Cobalt	sn 0520	Present	Environmental hazard (fume) 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

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 %

NFPA **Health hazard** 2 **Flammability** 0 **Instability** 0 **Physical and Chemical Hazards** -

HMIS **Health hazard** 2 **Flammability** 0 **Physical hazards** 0 **Personal precautions** -

Issuing Date 2015-02-06

Revision Date 2015-12-14

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