Material Safety Data Sheet
Tungsten Carbide Burr

Morrisflex

1. Identification of the Substance/preparation and Company/ Undertaking

Product Name	Tungsten Carbide Burrs
Chemical Name	Cemented Tungsten Carbide with Cobalt Binder
Application	Rotary Fettling and Deburring Tools
Supplier	Morrisflex Ltd
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	Northants NN11 7HX . United Kingdom
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2. Composition/ Information on Ingredients

Refractory Hardmetal consisting of Cemented Tungsten Carbide, with Cobalt Binder, generally in accordance with ISO grades K20 - K30.

3. Hazards Identification

In this fully sintered form, the product is inert and stable and is not regarded as a health or environmental hazard under current legislation. However care should be exercised in its handling, deployment and use, as sharp flutes can cut and invariably heat will be generated in the tool and workpiece. Workpiece Dusts will always be present so personal protective equipment (gloves and approved safety glasses etc) and LEV should always be used.

4. First Aid Measures

The product, per se, poses no inherent danger and there should be no implications from skin contact and the like. However danger can arise from the product's deployment and interaction with the workpiece on which it is being used. This is likely to take the form of workpiece dust or swarf and generated heat. Issues associated with Inhalation, Skin contact, eye contact and ingestion are primarily dependant on the nature of the workpiece and appropriate measures should be taken.

4. Fire Fighting Measures

Tungsten Carbide burrs present no fire hazards on their own but their interaction with the workpiece material can produce dangerous dusts and elevated temperatures. Working on materials like Aluminium, Titanium and Magnesium can generate fire hazards and it is recommended that a suitable quenching media (typically water) be at hand together with appropriate extinguishing media like CO_2 , Foam or Water.

6. Accidental Release

No special requirements

7.Handling and Storage

Tungsten rotary burrs are supplied in protective "snap pack" containers and should be kept in same until point of use. The flutes of the tool are both fragile and razor sharp and therefore the protective packaging is intended to prevent damage to both the tool and the user and those in the chain between. Care should be taken when removing the tool from the package and the head of the tool should only be touched with a gloved hand.

8. Exposure Controls / Personal Protection

Routes of Exposure

Fettling or Deburring with a hard metal rotary burr will produce workpiece dusts or fumes with potentially dangerous ingredients that could be inhaled, swallowed or come in contact with the skin or eyes.

Preventive Measures

Avoid inhalation of workpiece dust. Use local exhaust ventilation that is adequate and appropriate to limit personal exposure to within the limits stipulated by the HSE..

Respiratory Protection

If Local Exhaust Ventilation is not available or is inadequate, use respirators approved for use with the dusts being generated.

Eye Protection

Always use approved safety goggles or glasses with side shields .

Hand Protection

Wear suitable gloves wherever possible to avoid workpiece needles penetrating exposed skin. Wash hands thoroughly after handling.

Skin Protection

Use suitable protective clothing to guard against dusts and swarfs being generated. Launder clothing as needed.

Personal Hygiene

Do not eat, drink or smoke in the working area. Wash skin thoroughly before eating, drinking or smoking.

9. Physical and Chemical Properties

Form	Solid odourless mass with typical density in the range 2500- 4200 kg/m^2
Colour	usually Silver grey but could be coated in which case the colour could be anything from Gold (TiN) to a dark blue/grey.

10. Stability and reactivity

The product is stable under normal circumstances. Avoid contact with acids as hydrogen can be produced.

11. Toxicological Information

Routes of Exposure

Under recommended use, the rotary carbide burr should have no toxicological impact. However should the hardmetal component be re-ground or heated to an elevated temperature, then potentially dangerous dusts or fumes could be released that may be inhaled, swallowed or make contact with the skin or eyes.

Acute Toxicity

Inhalation

Inhalation may cause irritation and inflammation in the airways. A significantly higher acute inhalation toxicity has been reported at simultaneous inhalation of cobalt and tungsten carbide compared to inhalation of cobalt alone.

Tungsten carbide and cobalt: LC_{50}, 4h, rat: 0,24 - 0,52 mg/l

Skin contact

Skin contact can cause irritation and rash. Sensitized persons may experience an allergic reaction.

Ingestion

Cobalt:	LD_{50} oral, rat: >7000 mg/kg
Tungsten carbide:	LD_{50} oral, rat: >2000 mg/kg

Eye contact

Eye contact may cause irritation.

Chronic Toxicity

Inhalation

Repeated inhalation of aerosols containing cobalt may cause obstruction in the airways. Prolonged inhalation of increased concentrations may cause lung fibrosis. Epidemiological studies indicate that workers exposed in the past to high concentrations of tungsten carbide/cobalt carried an increased risk of developing lung cancer.

Skin contact

Cobalt is a potent skin sensitizer. Allergic contact dermatitis due to cobalt has been reported in several studies.

12. Ecological Information

Toxicity

- Aquatic toxicity

Cobalt:	Algae: IC_{50}, 72 h: < 1 mg/l
	Daphnia: EC_{50}, 48 h: > 100 mg/l
	Fish: LC_{50}, 96 h: > 100 mg/l
Tungsten carbide:	Algae: IC_{50}, 72 h: 130 mg/l (growth rate)
	Daphnia: EC_{50}, 48 h: > 1000 mg/l
	Fish: LC_{50}, 96 h: > 1000 mg/l
Soil organisms: Unknown	Plants and terrestrial animals: Unknown

13. Disposal Considerations

Tungsten Carbide burrs are not considered to be Hazardous Waste

14. Transport Information

Dangerous Goods: This material is not dangerous goods

15. Regulatory Information

Classification

T - Toxic

Limit values for exposure at the place of work

Substance	CAS No	EINECS No	UK OEL mg/m^3	OSHA PEL mg/m^3	ACGIH TLV -TWA mg/m^3
Cobalt	7440-48-4	231-158-0	0,1	0,1	0,02
Tungsten carbide	12070-12-1	235 -123-0	5	Not established	5

Risk phrases

R48/23; Toxic: danger of serious damage to health by prolonged exposure through inhalation

R23; Toxic by inhalation

R40; Possible risks of irreversible effects

R42/43; May cause sensitization by inhalation and skin contact

Safety phrases

S22; Do not breathe dust

S24; Avoid contact with skin

S37; Wear suitable gloves

Other national regulations may be applicable to this preparation.

16. Other Information