

**SAFETY DATA SHEET FOR DCN450 Products**

**1. Identification of the article and of the company/undertaking:**

**Identification of the product:**

DCN450 synthetic polycrystalline cubic boron nitride cutting tool material.

**Use of the product:**

Abrasive cutting tool material used in machining hard ferrous materials.

**Company Identification**

Company: Element Six Ltd

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**Emergency Number:**

**+353 61 471655**

**2. Hazards Identification**

Cubic boron nitride and sintered polycrystalline cubic boron nitride are not hazardous substances and in the solid massive form do not present a health hazard.  
 Titanium Nitride, Titanium Carbide, Aluminium Oxide, Titanium Di Boride, Aluminium Di Boride, Aluminium Nitride and Tungsten carbide materials are not hazardous substances and in the product massive form do not present a health hazard.  
 This product contains cobalt. Cobalt may cause sensitization by inhalation and skin contact. Cobalt may cause long term adverse effects in the aquatic environment.  
 Aluminium compounds are found commonly in industry and are active chemically and may exhibit dangerous toxic and reactive properties.  
 Dust, fumes, vapours generated during processing operations can enter the body through inhalation, ingestion and skin contact and can cause / result in respiratory tract and eye irritation. Always use adequate local exhaust ventilation.

**3. Composition/Information on Ingredients**

No	Name	EC Nr. (ELINCS/EINECS)	CAS N°	Concentration range	Classification
<b>Cubic Boron Nitride Layer</b>					
1	Cubic Boron Nitride	233-136-6	10043-11-5	40..50%	Not hazardous according to Directive 67/548/EEC
2	Titanium Nitride	247-117-5	25583-20-4	25..35%	Not hazardous according to Directive 67/548/EEC
3	Titanium Carbide	235-120-4	12070-08-5	10..20%	Not hazardous according to Directive 67/548/EEC

4	Aluminium Oxide	215-691-6	1344-28-1	< 10%	Not hazardous according to Directive 67/548/EEC
5	Titanium Di Boride	235-961-4	12045-63-5	< 5%	Not hazardous according to Directive 67/548/EEC
6	Aluminium Di Boride	234-923-7	12041-50-8	< 5%	Not hazardous according to Directive 67/548/EEC
7	Aluminium Nitride	246-140-8	24304-00-5	< 5%	Not hazardous according to Directive 67/548/EEC
8	Tungsten Carbide	235-123-0	12070-12-1	< 5%	Not hazardous according to Directive 67/548/EEC

**Cemented Carbide Layer**

1	Tungsten Carbide	235-123-0	12070-12-1	85..90 %	Not hazardous according to Directive 67/548/EEC
2	Cobalt	231-158-0	7440-48-4	10..15%	R42/43 - R53 Annex I Index# : 027-001-00-9

Please refer to the specific product grade and type for the specified chemical composition.

**4. First Aid Measures**

See also section 8 and 16

Inhalation: If high concentrations are inhaled or if worker exhibits trouble breathing, remove to fresh air. As a general rule, in case of doubt or if symptoms persist, always consult a doctor or seek medical attention.

Eye contact: Use eye wash for 15 minutes. As a general rule, in case of doubt or if symptoms persist, always consult a doctor or seek medical attention.

Skin contact: If exposed wash hands and exposed skin thoroughly with soap and water.

Ingestion: Should the situation arise, rinse out the mouth and drink plenty of water. As a general rule, in case of doubt or if symptoms persist, always consult a doctor or seek medical attention.

Note to physician: Not available.

**5. Fire Fighting Measures**

Polycrystalline cubic boron nitride is not a fire hazard under normal conditions. However dust produced from grinding may be flammable and may pose a fire hazard if allowed to accumulate in the presence of an ignition source.

Extinguishing media: water, foam, sand, powder or CO<sub>2</sub> as appropriate for surrounding materials

**6. Accidental release measures**

Avoid dust formation and ventilate area. Wear appropriate personal protective equipment. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Vacuum or carefully scoop up material spillages and place in appropriate containers for disposal. Avoid dispersal or runoff to soil, sewer or surface water.

**7. Handling and Storage**

Handling:

Avoid contact with eyes, skin and clothing. Product used under normal operating conditions does not require special safety precautions other than the normal safety procedures for handling chemicals. During processing operations, generated dust or fumes may require special consideration. Wash hands after handling, before eating or smoking. Wash exposed skin. Smoking and consumption of food or drink should be restricted from areas where hazardous components may arise. Maintain good housekeeping procedures to avoid dust accumulation during processing. Avoid dust inhalation and direct skin contact. Periodic medical monitoring is recommended for individuals regularly exposed to dust or fumes, with particular attention to any potential sensitisation.

Storage:

Keep material in a tightly closed containers and store in a cool dry area. Keep away from sources of ignition.

**8. Exposure Controls / Personal Protection**

Before processing it is recommended to perform a risk assessment and to use personal protection equipment accordingly.

8.1. Occupational exposure limit values and/or biological limit values

Keep exposure of the following components under surveillance

No	Name	CAS Nr.	Specification	Concentration limits (daily average value)	Short term value	Remarks
1	Cobalt	7440-48-4	IRL OEL	TWA: 0.1 mg/m <sup>3</sup> , 8 hrs	NA	None
2	Tungsten and compounds (as W)	7440-02-0	IRL OEL	Soluble 1 mg/m <sup>3</sup> , 8 hrs Insoluble 5 mg/m <sup>3</sup> , 8 hrs	3 mg/m <sup>3</sup> , 15min 10mg/m <sup>3</sup> , 15min	None
3	Aluminium Oxide	1344-28-1	IRL OEL	TID 10 mg/m <sup>3</sup> , 8 hrs Respirable Dust 4 mg/m <sup>3</sup> , 8 hrs	NA	None
4	Dust Non- specific (Respirable)	-	IRL OEL	TWA: 4 mg/m <sup>3</sup> , 8 hrs	NA	None

Note: Hazardous dust / fumes may be generated during processing. National regulations for dust exposure limit values have to be taken into consideration. Consult and observe local authorities for acceptable exposure limit values.

8.2. Exposure controls

8.2.1. Occupational exposure controls

Use only with adequate ventilation and or local exhaust ventilation.

8.2.1.1. Respiratory protection: Use respiratory protective equipment  
(type depends on specific application and material being processes)

8.2.1.2. Hand protection: Wear protective gloves  
(type depends on specific application and material being processes)

8.2.1.3. Eye protection: Wear protective goggles or face shield  
(type depends on specific application and material being processes)

8.2.1.4. Hearing protection: Wear hearing protection if noise in excess of occupational exposure limit.

8.2.1.5. Body protection: Wear body protection to protect body from spillages during processing.

**9. Physical and Chemical Properties**

9.1 Physical state: Massive disc.

9.2 Colour: Dark grey.

9.3 Solubility in water: insoluble.

**10. Stability and Reactivity**

Stability

Product is stable when used under normal conditions.

Reactivity

10.1 Conditions to avoid:  
No decomposition in normal use.

10.2 Materials to avoid:  
Avoid contact with strong acids and oxidizers.

10.3 Hazardous decomposition products:  
No decomposition products known.

**11. Toxicological Information**

Acute Toxicity



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EC - Safety Data Sheet

Reference: #1

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No potentials known.

**12. Ecological Information**

- 12.1 Ecotoxicity: No potentials known.
- 12.2 Mobility: No potentials known.
- 12.3 Persistence and degradability: No biodegradable potentials known.
- 12.4 Bioaccumulative potential: No potentials known.
- 12.5 Other hazardous effects: No effects known.

**13. Disposal Considerations**

- 13.1. Product  
Follow national and regional regulations. Dispose of in a licensed facility and in accordance with appropriate government regulation. May be sold as scrap for reclaim.
- 13.2. Packing  
Follow national and regional regulations.

**14. Transport Information**

The product is not covered by international regulation on the transport of dangerous goods.

**15. Regulatory Information**

EU Regulations

**16. Other Information**

The above information is based on our current standard of knowledge and does not constitute any warranty of conditions of the product. The product must not be used for any purposes other than those specified. It remains the user's responsibility to adhere to existing laws and regulations. The information given in this safety data sheet must be regarded as a description of the safety requirements relating to the product and not a guarantee of its properties.

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