

Safety Data Sheet

according to Regulation (EC) No 1907/2006

thermal spray powder, containing chromium, nickel and boron

Print date: 25.06.2012

Product code: 7132

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

thermal spray powder, containing chromium, nickel and boron

Further trade names

DURMAT 350, DURMAT 351, DURMAT 352, DURMAT 353, DURMAT 40-WSC, DURMAT 50-WSC,
DURMAT 60-WSC, DURMAT 75-WSC, DURMAT 80-WSC

Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

fused tungsten carbide-based thermal spray powder for industrial purposes

Details of the supplier of the safety data sheet

Company name:	DURUM Verschleiss-Schutz GmbH	
Street:	Carl-Friedrich-Benz-Strasse 7	
Place:	D-47877 Willich, Germany	
Telephone:	+49 (0) 21 54/48 37-0	Telefax: +49 (0) 21 54/48 37-78
e-mail:	info@durum.com	
Internet:	www.durmat.com	

Emergency telephone: +1-800-424-9300 (Chemtrec Emergency)

SECTION 2: Hazards identification

Classification of the substance or mixture

Indications of danger : Toxic
R-phrases:
Limited evidence of a carcinogenic effect.
May cause sensitization by skin contact.
Toxic: danger of serious damage to health by prolonged exposure through inhalation.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
May be harmful with intended application by arising ozone and nitrogen oxides.
Cancer-causing chromium(VI)-compounds could be generated by welding chromium containing materials.

GHS classification

Hazard categories:
Respiratory/skin sensitization: Skin Sens. 1
Carcinogenicity: Carc. 2
Specific target organ toxicity - repeated exposure: STOT RE 1
Hazardous to the aquatic environment: Aquatic Chronic 3
Hazard Statements:
May cause an allergic skin reaction.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.

Label elements

Hazardous components which must be listed on the label

nickel

Signal word:	Danger
Pictograms:	GHS07-GHS08

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Hazard statements

- | | |
|------|---|
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary statements

- | | |
|-----------|--|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P285 | In case of inadequate ventilation wear respiratory protection. |
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |

SECTION 3: Composition/information on ingredients

Mixtures

Chemical characterization

tungsten carbide-based thermal spray powder for industrial purposes

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
231-111-4	nickel	10 - 48 %
7440-02-0	Carc. Cat. 3, T R40-43-48/23-52-53	
028-002-00-7	Carc. 2, Skin Sens. 1, STOT RE 1, Aquatic Chronic 3; H351 H317 H372 H412	
235-123-0	tungsten carbide	30 - 80 %
12070-12-1		
231-157-5	chromium	1 - 15 %
7440-47-3		
231-151-2	boron	1 - 3 %
7440-42-8		

Full text of R- and H-phrases: see section 16.

SECTION 4: First aid measures

Description of first aid measures

After inhalation

Apply fresh air. If irritation of the respiratory passages, due to the product, occurs: call a physician.

After contact with skin

Lather with soap and rinse well with water.

After contact with eyes

Remove contacts. Rinse well with plenty of luke-warm water. Subsequently consult an ophthalmologist.

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After ingestion

Wash out mouth with water. Make affected person vomit if conscious when large quantities swallowed.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

metal-fire-drencher, dry sand

Special hazards arising from the substance or mixture

Potentially flammable dust in association with air. Prevent from heat and oxidizing materials.

Advice for firefighters

Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing and gloves (filter mask). Prevent formation of clouds of dust. Aerate closed rooms. Follow safety measures in section 7 and 8.

Environmental precautions

Prevent dispersion. Do not empty into drains or the aquatic environment.

Methods and material for containment and cleaning up

Collect spilled material in sealable containers.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling

Prevent formation of clouds of dust. Wear suitable protective clothing and gloves.

Advice on protection against fire and explosion

Potentially flammable dust in association with air. Prevent from heat and oxidizing materials.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store only in original container. Keep in a cool, dry, well-ventilated place. Local exhaust required.

Advice on storage compatibility

Store in a fair distance from oxidizing substances and acids.

SECTION 8: Exposure controls/personal protection

Control parameters

Exposure limits (EH40)

CAS No	Chemical name	ml/m ³	mg/m ³	F/ml	Category	Origin
7440-47-3	Chromium	-	0.5		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
	- Nickel and its inorganic compounds (except nickel carbonyl); nickel and water-insoluble nickel compounds (as Ni)	-	0.5		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

Additional advice on limit values

Dust: inhalable fraction: 10 mg/m³

Dust: respirable fraction: 4 mg/m³

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Formation of ozone and nitrogen oxides on regular use by plasma flame. Leading component: ozone (CAS-Nr. 10028-15-6). Exposure limit value (GER) 0,1 ppm. Exposure limit value (Short term) (GB) 0,2 ppm. Exposure limit value (USA) 0,1 ppm (OSHA).

Cancer-causing chromium(VI)-compounds could be generated by welding chromium containing materials. Exposure limit value Chromium(VI)-compounds: 0,05 mg/m³

Exposure controls

Occupational exposure controls

Local exhaust required.

Protective and hygiene measures

When using do not eat, drink or smoke.

Respiratory protection

During spraying wear suitable respiratory equipment (filter mask).

Hand protection

Wear suitable protective clothing and heat-insulated gloves. Avoid contact with skin.

Eye protection

Safety goggles and dark lenses as appropriate to the thermal spray process.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state: dry powder
 Colour: light to dark grey
 Odour: odourless

Test method

pH-Value: not applicable

Changes in the physical state

Melting point: approx. 1200 bis 1370 °C

Boiling point: > 2900 °C

Flash point: not applicable

Flammability

according 92/69 EWG, A10:
not applicable

Explosive properties

Potentially flammable dust in association with air.

Lower explosion limits: not identified

Upper explosion limits: not identified

Auto-ignition temperature

according 92/69 EWG, A16:
not applicable

Solid:

Gas:

Oxidizing properties

according 92/69 EWG, A17: not applicable

Vapour pressure: negligible

Density: 2 - 6 g/cm³

Water solubility: not soluble

Other information

SECTION 10: Stability and reactivity

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Conditions to avoid

stable under normal conditions

Incompatible materials

oxidizing and acidic material

Hazardous decomposition products

Formation of ozone and nitrogen oxides on regular use by plasma flame. This reaction is independent to material used.

Cancer-causing chromium(VI)-compounds could be generated by welding chromium containing materials.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

No toxicological information is available on the product but on the ingredients named in section 3.

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
7440-02-0	nickel				
	oral	LD50 mg/kg	> 9000	Rat.	

Sensitising effects

Exposure to high concentrations may lead to sensitizing action to the skin and airways. May lead to allergic or irritative reactions on very sensitive persons.

Severe effects after repeated or prolonged exposure

May be irritant to mouth, throat and esophagus on prolonged exposure.

Carcinogenic/mutagenic/toxic effects for reproduction

Category 3 (EU): There is well-founded concern about the possible carcinogenic effects on human beings.

Further information

May be harmful through products of decomposition on regular use (see section 10)

SECTION 12: Ecological information

Toxicity

No ecological information is known on the product but on the in chapter 3 named ingredients

Chromium: LC50 (fish, 96 h): 40,5 mg/l; EC50 (algae, 48 h): 8,75 mg/l

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	h	Species	Source
7440-02-0	nickel					
	Acute fish toxicity	LC50	> 100 mg/l	96	Danio rerio	
	Acute algae toxicity	ErC50	100 mg/l	72	Selenastrum capricornutum	
	Acute crustacea toxicity	EC50	> 100 mg/l	48	Daphnia magna	

SECTION 13: Disposal considerations

Waste treatment methods

Advice on disposal

Disposal according to the local legislation. Waste of residues: Keep waste separate. Because of possible pollution, remove as industrial waste or hazardous waste. Contaminated packaging: Keep

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waste separate. Because of possible pollution, remove as industrial waste or hazardous waste.

Waste disposal number of used product

12101 WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS

Waste disposal number of contaminated packaging

12101 WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS

SECTION 14: Transport information

Environmental hazards

Dangerous for the environment: no

Other applicable information

Free for transport regulations.

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulatory information

Water contaminating class (D): 2 - water contaminating

SECTION 16: Other information

Full text of R-phrases referred to under sections 2 and 3

- 40 Limited evidence of a carcinogenic effect.
- 43 May cause sensitization by skin contact.
- 48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.
- 52 Harmful to aquatic organisms.
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- 53 May cause long-term adverse effects in the aquatic environment.

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

- H317 May cause an allergic skin reaction.
- H351 Suspected of causing cancer.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H412 Harmful to aquatic life with long lasting effects.

Further Information

The information enclosed this safety data sheet are correct according to our knowledge. They should detail the needs of safety for our products, but demonstrate no guarantee for product attributes and justify no legal relationship. Our departments will provide assistance with any special question regarding the conventional use of our product.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)