

Safety Data Sheet
according to 1907/2006/EC, Article 31

Revision: 13.07.2010

Printing date 13.07.2010

1 Identification of substance**Product details**

Trade name

Tungsten carbide Cobalt

Stock number:

22955

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240**2 Hazards identification**

Hazard designation:

Xn Harmful
F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.
R 42/43 May cause sensitisation by inhalation and skin contact.

GHS label elements

**Danger**

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Warning**

H228 - Flammable solid.

Warning

H317 - May cause an allergic skin reaction.

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Response:

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P285 In case of inadequate ventilation wear respiratory protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P321 Specific treatment (see on this label).

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)

Tungsten carbide (CAS# 12070-12-1); 94%
Cobalt (CAS# 7440-48-4); 6%**4 First aid measures**

After inhalation

Supply fresh air and call for doctor for safety reasons.
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Seek immediate medical advice.

After skin contact

Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.

After swallowing

Rinse opened eye for several minutes under running water. Then consult doctor.

Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents

Water.

Special hazards caused by the material, its products of combustion or flue gases:

Can be released in case of fire:
Carbon monoxide and carbon dioxide
Metal oxide

Protective equipment:

Wear self-contained breathing apparatus.
Wear full protective suit.**6 Accidental release measures**

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Ensure adequate ventilation

Keep away from ignition sources

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

7 Handling and storage

Handling

Information for safe handling:

Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of dust.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

Storage

Requirements to be met by storerooms and containers:

Store in cool location.

Information about storage in one common storage facility:

Do not store together with oxidizing and acidic materials.

Further information about storage conditions:

Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

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8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with critical values that require monitoring at the workplace:

Cobalt, elemental & inorganic compounds, as Co
mg/m³

ACGIH TLV	0.02; Confirmed animal carcinogen
Austria	Carcinogen
Belgium TWA	0.05
Denmark TWA	0.05
Finland TWA	0.05 (skin)
Germany	Carcinogen
Hungary TWA	0.1; 0.2-STEL
Japan OEL	0.05; 2B Carcinogen
Korea TLV	0.02; Confirmed animal carcinogen
Ireland TWA	0.1
Netherlands MAC-TGG	0.05
Norway TWA	0.05
Poland TWA	0.05; 0.2-STEL
Russia	0.5-STEL
Sweden NGV	0.05
Switzerland MAK-W	0.1; Carcinogen
United Kingdom TWA	0.1
USA PEL	0.1 (dust and fume)

Tungsten and compounds (as W)
mg/m³

ACGIH TLV	1; 3-STEL (soluble compounds)
	5; 10-STEL (insoluble compounds)
Belgium TWA	5; 10-STEL
Denmark TWA	5
Finland TWA	5
Korea TLV	5; 10-STEL
Netherlands MAC-TGG	5
Norway TWA	5
Poland TWA	5
Russia	2-STEL
Sweden NGV	5
Switzerland MAK-W	5
United Kingdom TWA	5; 10-STEL

No data

Additional information:**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Use breathing protection with high concentrations.
Safety glasses
Face protection
Protective work clothing.

Breathing equipment:**Eye protection:****Body protection:****9 Physical and chemical properties:****General Information**

Form:	Powder
Colour:	Grey
Smell:	Odourless

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
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Inflammability (solid, gaseous)	Highly flammable.
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Ignition temperature:	Not determined
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Decomposition temperature:	Not determined
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Critical values for explosion:

Lower:	Not determined
Upper:	Not determined

Steam pressure:	Not determined
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Density	Not determined
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Solubility in / Miscibility with Water:	Insoluble
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10 Stability and reactivity**Thermal decomposition / conditions to be avoided:****Materials to be avoided:****Dangerous reactions:****Dangerous products of decomposition:**

No decomposition if used and stored according to specifications.
Acids
Oxidizing agents
No dangerous reactions known
Carbon monoxide and carbon dioxide
Metal oxide

11 Toxicological information**Acute toxicity:****Primary irritant effect:****on the skin:****on the eye:****Sensitization:**

Irritant for skin and mucous membranes.
Irritant effect.
Sensitization possible by inhalation.
Sensitization possible by skin contact.

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Trade name **Tungsten carbide Cobalt****Additional toxicological information:**

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To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.
ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this product.
May cause sensitisation by inhalation and skin contact.

Sensitisation**12 Ecological information:****Additional ecological information:****General notes:**

Generally not hazardous for water.
Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:
Recommendation**

Consult state, local or national regulations for proper disposal.
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.

**Uncleaned packagings:
Recommendation:**

Disposal must be made according to official regulations.

14 Transport information**Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

ADR/RID-GGVS/E Class: 4.1 (F3) Flammable solids, self-reactive substances and solid desensitised explosives.
Kemler Number: 40
UN-Number: 3178
Packaging group: III
Label: 4.1
Designation of goods: 3178 FLAMMABLE SOLID, INORGANIC, N.O.S. (Tungsten carbide Cobalt)
Limited quantities (LQ): LQ9
Transport category: 3
Tunnel restriction code: E

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: 4.1
UN Number: 3178
Label: 4.1
Packaging group: III
Marine pollutant: No
Correct technical name: FLAMMABLE SOLID, INORGANIC, N.O.S. (Tungsten carbide Cobalt)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 4.1
UN/ID Number: 3178
Label: 4.1
Packaging group: III
Correct technical name: FLAMMABLE SOLID, INORGANIC, N.O.S. (Tungsten carbide Cobalt)

UN "Model Regulation":

UN3178, FLAMMABLE SOLID, INORGANIC, N.O.S., 4.1, III

15 Regulatory information**Designation according to EC guidelines:****Code letter and hazard designation of product:**

Xn Harmful
F Highly flammable

Risk phrases:

11 Highly flammable.
42/43 May cause sensitisation by inhalation and skin contact.

Safety phrases:

22 Do not breathe dust.
23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
24 Avoid contact with skin.
37 Wear suitable gloves.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
60 This material and its container must be disposed of as hazardous waste.

National regulations**Information about limitation of use:**

Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

Water hazard class:

Generally not hazardous for water.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.
Contact: Zachariah Holt

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Trade name **Tungsten carbide Cobalt****Abbreviations and acronyms:**

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ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)

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