

Safety Data Sheet

Issue
10/0206

Tungsten Electrodes Thoriated



1. General characterization

1.1 Chemical characterization: W + ThO₂
Tungsten, thoriated

1.2 Hazardous Ingredients:
Ingredient: Tungsten
Alloying element: max. 4% thoria

1.3 Condition: solid

1.4 Appearance: steel-grey to black metal

1.5 Odour: no odour

2. Physical and safety data

2.1 Boiling point: 5900 C (6173 K)

2.2 Vapour pressure: not volatile

2.3 Vapour density: not volatile

2.4 Solubility of water: insoluble

2.5 Density: 19.3 g/cm³

2.6 Percent, volatile by volume 0

2.7 Evaporation rate: not volatile

Comments: Tungsten has a high density.
Powder/dusts will settle quickly

2.8 Flashpoint: N/A

2.9 Flammable limits: N/A

2.10 Others: Thoriated tungsten powder/dust e.g. grinding dust may be a weak fire and explosion hazard depending on particle size and dispersion in air.

2.11 Reactivity data:

2.11.1 Stability Stable

2.11.2 Incompatibility: None known

2.11.3 Hazardous decomposition products:

WO₃- vapour at high temperatures (>800 C, 1073K)

not toxic: Th and ThO₂ fume weakly radioactive

2.11.4 Hazardous polymerisation: will not occur

3. Transport

No special precautions needed

4. Prescriptions

No special prescriptions to take into consideration

5. Protection, storage and handling

5.1 Technical protection:

Ventilation: Local exhaust

5.2 Personal protection:

Respiratory protection: use respirators during grinding

Protective gloves: not necessary

Eye protection: safety glasses

Other protective equipment: depending on local conditions

5.3 Storage: if possible, avoid contact with grinding dust and smoke

5.4 Waste disposal: Dispose of in accordance with federal, state and local laws and regulations.

Protective gloves: not necessary

Eye protection: safety glasses

Other protective equipment: depending on local conditions

6. Precautions in case of accidents with fire

6.1 Spill and leak procedures: Steps to be taken in Case material is spilled or released provide clean-up employees with respirators for dusty conditions (grinding dust).

6.2 Extinguishing media: dry chemical, sand or Limestone

6.2.1 Special fire fighting procedures: Use a class D dry powder extinguisher recommended for metal fires. Wear self-contained breathing apparatus. After ignition source is removed, the metal may continue to glow until complete oxidation has occurred. Cover all exposed surfaces, do not disturb until completely extinguished and allowed to cool.

6.3 Emergency and first aid procedures: If a person breathes in large amounts of dust, remove from exposure. If material gets in eyes, flush particles from eyes with water.

7. Health hazard data

7.1 Special health hazard: According to the German regulation "BGBI. 1979, No. 125 Z1997A, 13. Oct. 1976" activity ingestion of thorium-contaminated air of 4.8.10-10 Curie/year is permitted. References available at this time do not report toxicity or other adverse health effects are known.

7.2 Ingredients: Thorium is a naturally occurring radioactive element, emitting primarily alpha radiation. Its decay products emit both alpha and gamma radiation. NCR exposure limit for natural thorium in air is 2 x 10⁻¹² micro curies per ml of air (9 micrograms per m³).

8. Oecological data

No special prescriptions.

Ventilation over filter.