1. Identification of the substance and the company

- **Trade name:** **Tungsten electrodes**
- **Article numbers:** P50010017, P50010018, P60010017, P60010018

  P52.01841, P52.04790, P53.03112, P53.03156, P53.03157, P53.03482, P53.03719, P53.03783, P53.03784, P53.03785, P53.03786, P53.03787, P53.03788, P53.03789, P53.03790, P53.03792, P53.03793, P53.03794, P53.03795, P53.03796, P53.03797, P53.03799, P53.03845, P53.03921, P53.04441, P53,04442, P53.04511, P53.04512, P53.04560, P53.04630, P53.04631, P53.04648, P53.04649, P53.04764, P53.04765, P53.04768, P53.04769, P53.99159, P53.99226, P53.99320, P53.99321, P53.99322, P53.99469, P53.99575, P53.99577, P53.99578, P53.99593, P53.99594, P53.99607, P53.99646, P53.99995, P54.00132, P54.00155, P54.01129, P54.02096

  PWI.00297, PWI.00338, PWI.00339, PWI.00346, PWI.00347, PWI.00348, PWI.00373, PWI.00441, PWI.00525, PWI.00565, PWI.00600, PWI.00612, PWI.00616, PWI.00837, PWI.00839, PWI.00841, PWI.00842, PWI.00843, PWI.01394, PWI.01395, PWI.01544
- **Product use:** Plasma and TIG welding, plasma cutting and plasma spraying
- **Supplier:** Plasmatechnik Markus Colling GmbH & Co. KG
  Gewerbegebiet Wallfeld 2
  66649 Oberthal / Germany
  Tel. 06854-90929-0
  Fax 06854-90929-29

2. Composition

- **Chemical characterisation:**
  Tungsten with up 4% oxide additives to improve the ignition ability and the electrode life time.
- **Dangerous components:**
  None known. Free of Thorium.

3. Potential Dangers

- This product does not feature hazardous properties for the purpose of the EU directive 67/548/EEC (Dangerous Substances) and 99/45/EC (Dangerous Preparations Regulations) and of the Act on the Protection against Hazardous Substances (Chemical Act) of June 2002.

- No danger known caused by the material. However observe the general national safety regulations for welding, cutting and related working processes.
- Tungsten electrodes can be sharpened extremely. This may lead to injures.
- Do not inhale dust and smoke when regrinding

4. First aid measures

- **After Inhalation:**
  Seek medical attention if symptoms persist.
- **After Skin Contact:**
  In general there is no skin-irritation.
- **After Eyes Contact:**
  Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for several minutes. If eye irritation persists, seek medical attention.
- **After Ingestion:**
  Thoroughly rinse mouth and consult a doctor.
- **Information for medical:**
  If swallowed or in case of vomiting, danger of entering the lungs. Observation for pneumonia and pulmonary oedema.

5. Fire-fighting measures

- No risk for spontaneous ignition or explosion.

- **Suitable extinguishing media:**
  In case of fire use extinguishing powder class D, water jet, sand.
- **Not suitable extinguishing media:**
  Water, ABC powder, Halon, CO_2

6. Accidental release measures

- **Personal precautions:**
  For release of dust or smoke – extracting devices and breathing protection with particle filter P2 or P3, recommended P3, colour code: white.
- **Environmental measures:**
  Procure to avoid release into environment. Waste, dust filters and recipients are to be disposed of in a safe and secure way, according to the respective national regulations in force. Grey washing or grinding water is to be captured and disposed of. In case of contamination authorities should be advised.
- **Methods for cleaning up:**

Mechanical sweeping and place in container for disposal according to local / national regulations.

7. Handling and Storage

- **Handling:**
  Avoid the incorporation of dust during grinding by use of appropriate extraction devices and breathing protection with particle filter P2 or P3, recommended P3, colour code: white.

- **Storage:**
  No special requirements

8. Exposure controls and personal protection

- **Components with workplace control parameters:**
  CAS-No.: 744-33-7
  EG-No.: 231-143-9
  Name of the substance: Tungsten
  Art: MAK (TRGS 900)
  Critical Value: 5E
  Unit: mg/m^3

- **Personal protective equipment:**
- **General protection and hygiene measures:**
  Promptly remove contaminated clothing.
  Keep away from food, drink and feedstuffs.
  Wash hands before eating, drinking, smoking or using toilet facilities.
- **Breathing protection:**
  Wear breathing protection with particle filter P2 or P3, recommended P3, colour code: white and/or extracting devices.
- **Hand protection:**
  Wear general protective gloves or welding gloves.
- **Eye protection:**
  Wear protective goggles during grinding, welding or cutting.
- **Body protection:**
  Wear work protective clothing.

9. Physical and chemical properties

- **Form:** solid, rod-shaped
- **Colour:** metallic grey

- **Odour:** inodorous
- **Boiling point:** 5,828K
- **Melting point:** 3,680K
- **Flash point:** not applicable
- **Flammability:** not applicable
- **Self-in flammability:** none
- **Danger of explosion:** none
- **Oxidising characteristics:** none
- **Vapour pressure at 20°C:** 0 hPa
- **Density:** 18.6 g/cm^3
- **Solubility:** insoluble in water, slowly soluble in HNO_3+HF, soluble in alkaline oxidation melts
- **Electrical conductivity:** 18.2 m/ Ω mm²

10. Stability and reactivity

- **Stability:**
  Stable under normal conditions, when used as intended.

- **Conditions to be avoided:**
  Presence of oxygen and temperatures > 600°C cause oxidation, from 977°C sublimation (tungsten trioxide WO_3, CAS 1314-35-8)

- **Substances to be avoided:**
  Contact with strong acids and/or bases; or with halogens (fluorine, chlorine, bromine, iodine and their compounds); or with oxidation agents (e.g. perchlorate, peroxide, permanganate, chlorate, nitrates, nitrites chromates), or with alkali/earth alkali metals (e.g. lithium, sodium, potassium, magnesium, calcium) can cause strong reactions (danger of strong exothermal reactions, danger of formation of flammable gases, danger of formation of insalubrious / poisonous substances / gases), and must be avoided.

- **Hazardous decomposition products:**
  Oxidation produces oxides of the product which can evaporate (tungsten trioxide WO_3, CAS 1314-35-8).

11. Toxicological information

- The product does not show any acute, dermal or respiratory toxicity

12. Details on the RoHS conformity

- Free of Hazardous Substances listed in the RoHS directive

13. Ecological Data

- Not hazardous to water (German Water Hazard Class accord. to WvWvS)

14. Disposal considerations

- Waste disposal according to international, national and regional regulations. Contact your local office responsible for this. Uncleaned packagings can be handled as non-hazardous waste.

15. Transport information

- No EU transport regulations

16. Regulations

- The electrodes can be used without permission and without report to authorities.
- Observe the general national safety regulations for welding, cutting and related working processes.
- Further national provisions must be obeyed.

17. Other information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is not to be considered a warranty or quality specification.

The product is intended for commercial use only.

The electrodes may only be used in the intended way. Otherwise there could be risks which are not listed in this data sheet.

Date: 29.11.2023