1. Identification of the substance and the company

*Identification of the substance: Mo5Re, Mo41Re

*Use of the substance: products such as for e.g. high temperature thermoelements

*Company: PLANSEE SE, A-6600 Reutte, e-mail: environment.management@plansee.com

*Emergency number: phone +43 5672 600-0

2. Hazards Identification

*Classification: not hazardous material pursuant to regulation (EC) no. 1272/2008 EC or EC Directive 67/548/EEC

*Compact Metal / Alloy with no Risk to Human Health or the Environment.

3. Composition/Information on ingredients

*Summary: molybdenum 59 % mass fraction, rhenium 41 % mass fraction


*Hazardous components: none

4. First-aid measures

*Inhalation: no exposure when used as directed.

*Skin contact: wash dust off thoroughly with soap and water.

*Doctor is needed or advisable: consult a physician after prolonged exposure to dust.

5. Fire-fighting measures

*Suitable extinguishing media: The product itself is not flammable.

*Adapt extinguishing measures to surroundings.

*Special hazard: increased fire hazard during dust formation.

*Protective equipment: breathing protection in the presence of dust.

6. Accidental release measures

*Personnel-related precautionary measures: dust should be suction cleaned directly at source.

*Environmental protection measures: avoid contamination of agricultural soils (see item 12).

7. Handling and storage

*Handling: Avoid dust formation. Use suction cleaning if unavoidable and when processing at high temperatures (sublimation formation, see item 10).

*Storage: no special measures required.

8. Exposure controls/personal protection

*Exposure thresholds: workplace: molybdenum 10 mg/m³ inhalable fraction, mean daily value

*Dust-like emissions: General 5 mg/m³

*Wastewater emissions: molybdenum 5 mg/l

*Workplace exposure: install suction cleaning when working with dust and sublimate and use at least one FFP2 respirator.

*Environmental exposure: install suction cleaning with filter when working with dust formation. Do not empty into drains.

9. Physical and chemical properties

*Appearance: solid grey material

*Melting point: > 2610°C

*Density: Mo5Re: 10.7 g/cm³ at 20°C Mo41Re: 14.6 g/cm³ at 20°C

*Solubility: insoluble in water, acids and bases; soluble only in complex-forming acids (sulphuric or phosphoric) or bases in combination with a strong oxidizing agent.

10. Stability and reactivity

*Conditions to be avoided: high temperatures in air (strong oxidation beginning around 600°C, sublimation of MoO₃ beginning around 700°C).

*Substances to be avoided: none

11. Toxicological information

*No known toxic effects.

12. Ecological information

*Ecotoxicity: molybdenosis (copper deficiency disease caused by Mo in ruminants)

*No other ecotoxicological effects.

*Mobility: low mobility due to low solubility.

*Persistence and degradability: stable inorganic material

*Bioaccumulation potential: no data available.

13. Disposal considerations

*Dispose of residues as metal waste. Obey national or regional regulations.

14. Transport information

*ADR / RID / ADN / IATA (ICAO) / IMDG: not a dangerous good pursuant to international transport regulations.

15. Regulatory information

*No labeling required.

*The exposure thresholds given under item 8 pertain to Austrian legal regulations.

*Obey national regulations.

16. Other information

*Above information corresponds to our current state of knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

*Detailed results of toxicological and ecotoxicological effects are described in the chemical safety report for REACH registration.