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Revision No: 10

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

1.1. Product identifier

Product name: TUNGSTIC OXIDE ON ALUMINA

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

Use of substance / mixture: PC21: Laboratory chemicals.

1.3. Details of the supplier of the safety data sheet

Company name: Elemental Microanalysis Ltd

1 Hameldown Road Okehampton

Okehampton

Devon EX20 1UB

United Kingdom

Tel: 44(0)183754446

Fax: 44(0)183754544

Email: info@microanalysis.co.uk

1.4. Emergency telephone number

Emergency tel: +44 (0) 7990 767375 (24 hours)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: STOT SE 3: H335

Most important adverse effects: May cause respiratory irritation.

2.2. Label elements

Label elements:

Hazard statements: H335: May cause respiratory irritation.

Hazard pictograms: GHS07: Exclamation mark



Signal words: Warning Precautionary statements: P261: Avoid breathing dust/fumes/gas/mist/vapours/spray.

P271: Use only outdoors or in a well-ventilated area.

P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312: Call a POISON CENTER/doctor//if you feel unwell.

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P403+233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

ALUMINIUM OXIDE

| EINECS | CAS | PBT / WEL | CLP Classification | Percent |
|---------------------|-----------|------------------------------------------------------|--------------------|---------|
| 215-691-6 | 1344-28-1 | Substance with a Community workplace exposure limit. | - | 70-90% |
| TUNGSTEN (VI) OXIDE | | | | |
| 215-231-4 | 1314-35-8 | - | STOT SE 3: H335 | 10-30% |

Section 4: First aid measures

| 4.1. Description of first aid measures | | | |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|--|
| | | | |
| Skin contact: | Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash | | |
| | immediately with plenty of soap and water. | | |
| Eye contact: | Bathe the eye with running water for 15 minutes. Consult a doctor. | | |
| Ingestion: | Wash out mouth with water. Consult a doctor. | | |
| Inhalation: | Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a | | |
| | doctor. | | |
| 4.2. Most important symptoms and effects, both acute and delayed | | | |
| Skin contact: | There may be irritation and redness at the site of contact. | | |
| Eye contact: | There may be irritation and redness. The eyes may water profusely. | | |
| Ingestion: | There may be soreness and redness of the mouth and throat. | | |
| Inhalation: | There may be irritation of the throat with a feeling of tightness in the chest. Exposure may | | |
| | cause coughing or wheezing. | | |
| Delayed / immediate effects: | Immediate effects can be expected after short-term exposure. | | |
| 4.3. Indication of any immedi | ate medical attention and special treatment needed | | |
| Immediate / special treatment: | Eye bathing equipment should be available on the premises. | | |
| Section 5: Fire-fighting measures | | | |
| | | | |

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not create dust.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Transfer to a closable, labelled salvage container for disposal by an appropriate

method

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area.

Do not handle in a confined space. Avoid the formation or spread of dust in the air.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed.

7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Hazardous ingredients:

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ALUMINIUM OXIDE

Workplace exposure limits: Respirable dust 15 min. STEL State 8 hour TWA 8 hour TWA 15 min. STEL ΕU _ _ 4mg/m3

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TUNGSTEN (VI) OXIDE

ΕU

10mg/m3

DNEL/PNEC Values

DNEL / PNEC No data available.

5mg/m3

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area. Respiratory protection: Self-contained breathing apparatus must be available in case of emergency. Respiratory protective device with particle filter. Particle filter class P1 (EN143). Hand protection: Protective gloves. Nitrile gloves. Eye protection: Safety glasses. Ensure eye bath is to hand. Skin protection: Protective clothing.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties State: Granules Colour: Yellow Odour: Odourless Evaporation rate: No data available. Oxidising: No data available. Solubility in water: No data available. Viscosity: No data available. Boiling point/range°C: No data available. Melting point/range°C: No data available. Flammability limits %: lower: No data available. upper: No data available. Flash point°C: No data available. Part.coeff. n-octanol/water: No data available. Autoflammability°C: No data available. Vapour pressure: No data available. Relative density: No data available. pH: No data available. VOC g/l: No data available.

9.2. Other information

Other information: No data available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.

Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Hazardous ingredients:

ALUMINIUM OXIDE

| ORAL RAT | LD50 | 10000 | mg/kg |
|----------|------|-------|-------|
|----------|------|-------|-------|

TUNGSTEN (VI) OXIDE

| ORAL MUS LD50 1059 mg/kg | ORAL | | LD50 | 1059 | mg/kg |
|--------------------------|------|--|------|------|-------|
|--------------------------|------|--|------|------|-------|

Relevant hazards for substance:

| Hazard | Route | Basis |
|----------------------|-------|-----------------------|
| STOT-single exposure | INH | Hazardous: calculated |

Symptoms / routes of exposure

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be soreness and redness of the mouth and throat.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

Section 12: Ecological information

12.1. Toxicity

Hazardous ingredients:

TUNGSTEN (VI) OXIDE

| ALGAE | 72H IC50 | 1 | mg/l |
|---------|----------|------|------|
| DAPHNIA | 96H LC50 | 2.6 | mg/l |
| FISH | 96H LC50 | 5.25 | mg/l |

12.2. Persistence and degradability

Persistence and degradability: Biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No bioaccumulation potential.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Negligible ecotoxicity.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

> NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

Transport class: This product does not require a classification for transport.

Section 15: Regulatory information

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

Specific regulations: Not applicable.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

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| Other information | |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Other information: | This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010. |
| | This safety data sheet is prepared in accordance with Commission Regulation (EC) No |
| | 1272/2008. * indicates text in the SDS which has changed since the last revision. |
| Phrases used in s.2 and s.3: H335: May cause respiratory irritation. | |
| Legal disclaimer: | The above information is believed to be correct but does not purport to be all inclusive |
| | and shall be used only as a guide. This company shall not be held liable for any |
| | damage resulting from handling or from contact with the above product. |