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MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1. Product identifiers

Product name: Aluminium sputtering target, diam. x thickness 25.4mm (1.0in) x 1 mm , 99.9% Product Code: A 3459 CAS No : 7429-90-5 1.2. Relevant identified uses of the substance or mixture and uses advised against Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet
Company identification
OTTO CHEMIE PVT LTD
101, Aarkay Ruby Industrial Estate(1B), Opp Shree Narayan Industrial Estate, Chinchpada, Vasai East, Waliv, Maharashtra 401208.
Email <u>info@ottokemi.com</u>

1.4. Emergency telephone number Phone no. : + 91 22 2207 0099 (9:00am - 6:00 pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 Flammable solids (Category 1), H228 Substances and mixtures which in contact with water emit flammable gases (Category 2), H261 For the full text of the H-Statements mentioned in this Section, see Section 16. 2.2 Label elements Labelling according Regulation (EC) No 1272/2008 Pictogram Signal Word Danger Hazard statement(s) H228 Flammable solid. H261 In contact with water releases flammable gas. Precautionary statement(s) P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P223 Do not allow contact with water. P231 + P232 Handle and store contents under inert gas. Protect from moisture. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Supplemental Hazard Statements none Reduced Labeling (<= 125 ml) Pictogram Signal Word Danger Hazard statement(s) none Precautionary statement(s) none Supplemental Hazard Statements none 2.3 Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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SECTION 3: Composition/information on ingredients

3.1 Substances Formula : Al Molecular weight : 26,98 g/mol CAS-No. : 7429-90-5 EC-No. : 231-072-3 No components need to be disclosed according to the applicable regulations. For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures General advice Show this material safety data sheet to the doctor in attendance. If inhaled After inhalation: fresh air. In case of skin contact In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower In case of eye contact After eye contact: rinse out with plenty of water. Remove contact lenses. The If swallowed After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell 4.2 Most important symptoms and effects, both acute and delayed The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11 4.3 Indication of any immediate medical attention and special treatment needed No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Sand Cement Special powder against metal fire
Unsuitable extinguishing media
Foam Water
5.2 Special hazards arising from the substance or mixture
Aluminum oxide
Not combustible.
May not get in touch with: Water
Ambient fire may liberate hazardous vapours.
5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.
5.4 Further information

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact.
Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.
6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.
6.3 Methods and materials for containment and cleaning up
Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

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7.1 Precautions for safe handling Advice on safe handling Keep workplace dry. Do not allow product to come into contact with water. Advice on protection against fire and explosion Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. Hygiene measures Change contaminated clothing. Wash hands after working with substance. For precautions see section 2.2. 7.2 Conditions for safe storage, including any incompatibilities Storage conditions Tightly closed. Keep away from heat and sources of ignition. Never allow product to get in contact with water during storage. Store under inert gas. Air and moisture sensitive. Storage class Storage class (TRGS 510): 4.3: Hazardous materials, which set free flammable gases upon contact with water 7.3 Specific end use(s) Apart from the uses mentioned in section 1.2 no other specific uses are stipulated **SECTION 8: Exposure controls/personal protection** 8.1 Control parameters Ingredients with workplace control parameters 8.2 Exposure controls Personal protective equipment Eye/face protection Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses Skin protection This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Full contact Material: Nitrile rubber Minimum laver thickness: 0.11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Splash contact Material: Nitrile rubber Minimum layer thickness: 0,11 mm Break through time: 480 min Material tested:KCL 741 Dermatril® L **Body Protection** Flame retardant antistatic protective clothing. Respiratory protection required when dusts are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type P1 The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. Control of environmental exposure

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Solid

No data available

No data available

660,37 °C - lit.

2.460 °C - lit

No data available

No data available 2,7 g/mL at 25 °C -

No data available

No data available

No data available

No data available

None

lit

Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties a) Physical state b) Color c) Odor d) Melting point/freezing point Melting point/range: e) Initial boiling point and boiling range f) Flammability (solid,gas) May form combustible dust concentrations in air. g) Upper/lower flammability or explosive limits h) Flash point i) Autoignition temperature j) Decomposition temperature k) pH I) Viscosity Viscosity, kinematic: Viscosity, dynamic: m) Water solubility n) Partition coefficient: n-octanol/water o) Vapor pressure p) Density Relative densitv q) Relative vapor density r) Particle characteristics s) Explosive properties t) Oxidizing properties 9.2 Other safety information No data available

SECTION 10: Stability and reactivity

10.1 Reactivity No data available 10.2 Chemical stability The product is chemically stable under standard ambient conditions (room temperature). 10.3 Possibility of hazardous reactions Risk of explosion with: Strong oxidizing agents metallic oxides nitrates nitrites Peroxides acetylidene halogens Halogenated hydrocarbon Carbon monoxide Methanol sulfates bromates iodates

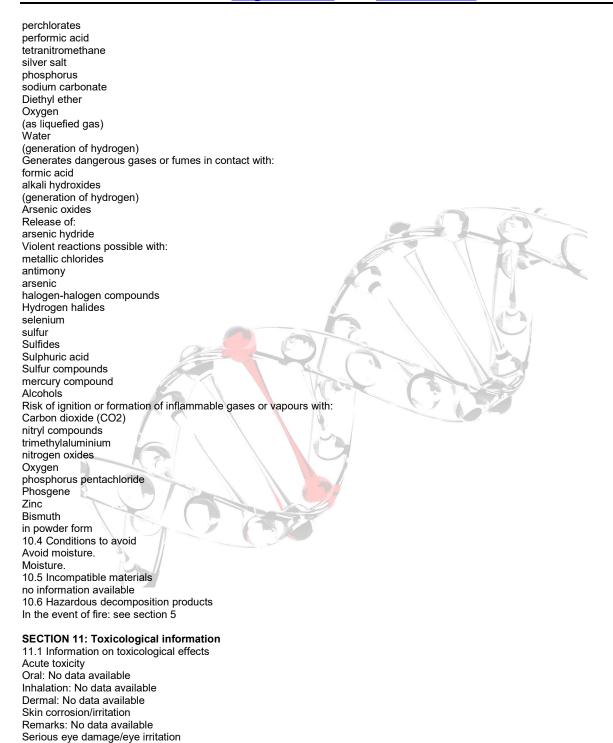
chlorates

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Remarks: No data available Respiratory or skin sensitization

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No data available Germ cell mutagenicity No data available Carcinogenicity No data available Reproductive toxicity No data available Specific target organ toxicity - single exposure No data available Specific target organ toxicity - repeated exposure No data available Aspiration hazard No data available 11.2 Additional Information Endocrine disrupting properties Product: Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. RTECS: BD0330000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. The following applies to aluminium compounds in general: After swallowing: only slightly absorbable via the gastrointestinal tract. Serious disorders in man (from about 4000 mg aluminium up): phosphate metabolism, calcium metabolism. However, when the product is handled appropriately, hazardous effects are unlikely to occur. Handle in accordance with good industrial hygiene and safety practice. **SECTION 12: Ecological information** 12.1 Toxicity No data available 12.2 Persistence and degradability No data available 12.3 Bioaccumulative potential No data available 12.4 Mobility in soil No data available 12.5 Results of PBT and vPvB assessment This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. 12.6 Endocrine disrupting properties Product: Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. 12.7 Other adverse effects Discharge into the environment must be avoided. **SECTION 13: Disposal considerations** 13.1 Waste treatment methods

Product See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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SECTION 14: Transport information

14.1 UN number ADR/RID: 3077 IMDG: 3077 IATA: 3077 14.2 UN proper shipping name ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Aluminum) IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Aluminum) IATA: Environmentally hazardous substance, solid, n.o.s. (Aluminum) 14.3 Transport hazard class(es) ADR/RID: 9 ÍMDG: 9 IATA: 9 14.4 Packaging group ADR/RID: III IMDG: III IATA: III 14.5 Environmental hazards ADR/RID: yes IMDG Marine pollutant: yes IATA: yes 14.6 Special precautions for user Tunnel restriction code : (-) Further information EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9 **SECTION 15: Regulatory information** 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 Authorisations and/or restrictions on use Regulation (EU) 2019/1148 on the marketing and use of explosives precursors : Aluminium (stabilised), powder Other regulations Take note of Dir 94/33/EC on the protection of young people at work. 15.2 Chemical Safety Assessment For this product a chemical safety assessment was not carried out Section 16: Other Information This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible

the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his

obligations regarding the use of hazardous products.

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risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse

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