MATERIAL SAFETY DATA SHEET (MSDS)

Product Name: Aluminium Oxide Nanoparticles
Product Series: Nanoparticles

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifiers

Product name: Aluminium oxide (Al_2O_3)
Brand: Techinstro
CAS-No.: 1344-28-1

1.2 Relevant identified uses of the substance & uses advised against

Identified uses: Laboratory chemicals, Research, and development.

1.3 Details of the Supplier

Company: M/s. Techinstro
Plot No. - 463, Yadav Nagar
Nagpur, Maharashtra, India
Pin Code- 440026
Emergency Contact: +91(0) 8007799090
Emergency Contact Email: info@techinstro.com

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification following 29 CFR 1910 (OSHA HCS)
Eye irritation (Category 2A), H319
Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, refer to Section 16.

2.2 GHS Label elements, including precautionary statements.

Hazard statement(s)
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary Statement(s)
P261 Always avoid breathing dust, fume, gas, mist, vapors, or spray.
P264 Wash skin after handling.
P271 Use only outdoors and in a well-ventilated area.

P280 Use protective gloves/ eye protection/ face protection.
P304 + P340 IF INHALED: Take the victim outside into fresh air and keep them in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse with water for several minutes. If you have contact lenses, then remove them. Continue rinsing.
P312 Call a doctor/ physician if you feel unwell.
P337 + P313 If eye irritation is there: Get medical advice/ attention.
P403 + P233 Store in a well-ventilated place. Keep the container tightly closed.
P405 Store locked up.
P501 Dispose of the container to a proper waste disposal plant.

2.3 Hazards (dangers) not otherwise classified (HNOC) or not covered by GHS
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Aluminum Oxide (Al_2O_3) CAS#: 1344-28-1
Hazardous components
Component: Aluminum Oxide (Al2O3) Powder
Classification: Eye Irrit. 2A; STOT SE 3,
H319, H335
For the full text of the H-Statements mentioned in this Section, refer to Section 16.

4. FIRST AID PRECAUTIONS

4.1 Description of first aid measures that should be taken

General advice
Consult a doctor. Show the safety data sheet to him. Move out of dangerous areas.
If breathed in, move the person into the fresh air. If not breathing, then give artificial respiration. Consult a doctor.

In case of skin contact
Wash with soap and with water. Consult a physician.
In the case of eye contact
Rinse thoroughly with water for about 15 minutes and consult a doctor.
If Swallowed: If someone is unconscious, do not give them anything to eat or drink orally. Instead, rinse their mouth with water. Consult a doctor.

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4.2 Most important symptoms, effects, both acute and delayed
The most significant known symptoms and effects are described in the labeling (see section 2.2) and in section 11

4.3 Indication of the need for any immediate medical attention and special treatment.
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemicals, or CO_2

5.2 Special hazards(dangers) arising from the substance or mixture
The product is not flammable

5.3 Advice for Firefighters
Always wear self-contained breathing apparatus for firefighting (if necessary).

5.4 Further information
No data available

6. ACCIDENTAL RELEASE PRECAUTIONS

6.1 Protective Equipment, Personal Precautions, and Emergency Procedures
It is important to wear personal protective equipment to ensure safety. It is also recommended to take measures to avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection, see section 8.

6.2 Environmental precautions
Do not let the product enter the drainage

6.3 Methods, materials for containment and cleaning up
To avoid creating dust, it is important to carefully pick up and arrange items for disposal. Use a broom and shovel to sweep up any debris, then place everything in closed containers that are appropriate for removal.

6.4 Reference to other sections
For disposal, see section 13.

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7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid the formation of dust and aerosols. Provide proper exhaust ventilation at places where dust is formed. For precautions, refer to section 2.2.

7.2 Conditions for safe storage, including incompatibilities, if any

Keep the container in a dry as well as in a well-ventilated place, and make sure it is tightly closed.

7.3 Specific End Use(s)

Apart from the uses in section 1.2, no other specific uses are mentioned.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with any occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Handle following good industrial hygiene and safety practices. Wash hands before breaks and at the end of a workday.
Personal protective equipment

Eye/face protection

Safety glasses with side shields conforming to EN166 The eye protection equipment should be tested and approved under proper government standards such as NIOSH (US) or EN 166(EU)

Skin protection

For any handling steps where the substance is particulate or in a suspension with pure water where the substance is not solubilized, the gloves must comprise a material that successfully passes ASTM F-1671. For any handling steps where the substance is part of a carrier liquid other than the aqueous suspension noted in the previous paragraph, gloves must be comprised of material that successfully passes ASTM F-739 (continuous liquid contact method). Gloves must be changed before they show degradation and before the designated breakthrough time for the carrier liquid (as determined by the ASTM F-739 testing or by the manufacturer). Handle with gloves. Gloves must be inspected before use.

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Use proper glove removal technique (without touching the glove's outer area) in order to avoid skin contact with the mentioned product. Dispose of contaminated gloves after use, following applicable laws and good laboratory practices. Wash and dry your hands.

Body Protection
Regarding protective gear, choosing clothing that can withstand exposure to the specific concentration and quantity of hazardous substances in the workplace is essential.
Respiratory protection
The EPA mandates using full-face respirators with minimum N100-grade cartridges if there is any risk of exposure to dust. For nuisance exposures, type P95 (US) or type P1 (EU EN 143) particle respirator. Use approved respirator cartridges like OV/AG/P99 (US) or ABEK-P2 (EU EN 143) and look for those tested and approved by government standards like NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let the product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Details on basic physical and chemical properties

a. Appearance (Looks): solid
b. Odor: Odorless
c. Odor Threshold: no data available
d. pH: no data available
e. Melting point/freezing point: 2072 °C
f. Initial boiling point and boiling range: 2977 °C
g. Flashpoint: No data available
h. Evaporation rate: No data available
i. Flammability (solid, gas): No data available
j. Upper flammability or explosive limits: No data available
k. Vapor pressure: no data available
l. Vapor density: no data available
m. Relative density: 3.9
n. Water solubility: insoluble
o. Partition coefficient - octanol/water: no data available
p. Auto-ignition temperature: no data available
q. Decomposition temperature: no data available
r. Viscosity: no data available
s. Explosive properties: no data available
t. Oxidizing properties: no data available

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9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents, Acids, Bases

10.6 Hazardous decomposition products
Other decomposition products - No data available

In case of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity**:** no data available
Inhalation: no data available
Dermal: no data available
Skin corrosion/irritation: no data available
Severe eye damage/eye irritation: no data available
Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
Carcinogenicity: no data available
Reproductive toxicity: no data available
Specific target organ toxicity: single exposure
Inhalation: This may cause respiratory irritation/issues.
Specific target organ toxicity: If repeated exposure, no data available
Aspiration hazard: no data available
Additional Information
RTECS: Not available
As far as we know, the chemical properties in question have yet to be thoroughly researched about their physicality, toxicity, and chemical makeup.

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12. ECOLOGICAL INFORMATION

12.1 Toxicity: No data available
12.2 Persistence & 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
PBT/vPvB assessment not available as a chemical safety assessment not required/not conducted
12.6 Other adverse effects: No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Offer surplus, non-recyclable solutions to a company having a disposal license. Contact a professional having permission from the waste disposal service to dispose of this material.
If contaminated packaging: Dispose of it as an unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
SARA 302: No chemicals used in this product are subject to the reporting necessities of SARA Title III, Sec 302.
SARA 313 Components

SARA 313: This substance does not have any chemical components that go beyond the reporting levels specified by SARA Title III, Section 313, which is known as the De Minimis threshold. It does not pose any hazards, according to SARA 311/312.

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16. OTHER INFORMATION

I am presenting this information in good faith and believe it to be accurate as of the date mentioned above. However, no warranty, express or implied, is given. The client's responsible for ensuring its activities comply with the relevant laws.

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