

# SAFETY DATA SHEET

AP-A, AP-D Powder



## Section 1. Identification

**Product identifier** : AP-A, AP-D Powder  
**Cat. No.** : 40700038, 40700039, 40700040, 40700041, 40700047, 40700048, 40700049  
**Container size** : 1 kg  
**Chemical name** : aluminium oxide  
**Other means of identification** : Aluminum oxide; Delta alumina; Theta alumina; .deta.-Alumina; Activated aluminium oxide; ALUMINA; Aluminum oxide (Al<sub>2</sub>O<sub>3</sub>); .alpha.-Alumina; alpha-Alumina; α-ALUMINA  
**Product type** : Powder.

### Recommended use of the chemical and restrictions on use

**Product use** : For polishing of materialographic specimens  
**Area of application** : Professional applications.

**Supplier's details** : Struers ApS  
Pederstrupvej 84  
DK-2750 Ballerup  
  
Telephone: +45 44 600 800

**e-mail address of person responsible for this SDS** : sdsquestions@struers.dk  
**Emergency telephone number (with hours of operation)** : +45 44 600 800 (Only during office hours)

## Section 2. Hazards identification

**Classification of the substance or mixture** : Not classified.

### GHS label elements

**Signal word** : No signal word.  
**Hazard statements** : No known significant effects or critical hazards.  
**Precautionary statements**  
**Prevention** : Not applicable.  
**Response** : Not applicable.  
**Storage** : Not applicable.  
**Disposal** : Not applicable.

**Other hazards which do not result in classification** : None known.

**Date of issue/Date of revision** : 2026/03/20 **Date of previous issue** : 2024/10/04 **Version** : 1.05 1/11



## Section 3. Composition/information on ingredients

|                                      |                                                                                                                                                                                                 |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Substance/mixture</b>             | : Substance                                                                                                                                                                                     |
| <b>Chemical name</b>                 | : aluminium oxide                                                                                                                                                                               |
| <b>Other means of identification</b> | : Aluminum oxide; Delta alumina; Theta alumina; .deta.-Alumina; Activated aluminium oxide; ALUMINA; Aluminum oxide (Al <sub>2</sub> O <sub>3</sub> ); .alpha.-Alumina; alpha-Alumina; α-ALUMINA |

| Ingredient name | %   | Identifiers    |
|-----------------|-----|----------------|
| aluminium oxide | 100 | CAS: 1344-28-1 |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

|                     |                                                                                                                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.                                                                    |
| <b>Inhalation</b>   | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.                                                                                                                          |
| <b>Skin contact</b> | : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.                                                                                                                           |
| <b>Ingestion</b>    | : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

|                     |                                                                                                                                          |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.                   |
| <b>Inhalation</b>   | : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. |
| <b>Skin contact</b> | : No known significant effects or critical hazards.                                                                                      |
| <b>Ingestion</b>    | : No known significant effects or critical hazards.                                                                                      |

#### Over-exposure signs/symptoms

|                     |                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : Adverse symptoms may include the following:<br>irritation<br>redness                    |
| <b>Inhalation</b>   | : Adverse symptoms may include the following:<br>respiratory tract irritation<br>coughing |
| <b>Skin contact</b> | : No specific data.                                                                       |
| <b>Ingestion</b>    | : No specific data.                                                                       |



## Section 4. First aid measures

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark** : Not considered to be a product presenting a risk of explosion.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing dust. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Absorb spill with inert material (e.g. dry sand or earth) and place in a chemical waste container.



## Section 6. Accidental release measures

- Large spill** : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name | Exposure limits                                                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| aluminium oxide | <b>ACGIH TLV (United States, 1/2025)</b><br><b>[Aluminum, metal and insoluble compounds] A4.</b><br>TWA 8 hours: 1 mg/m <sup>3</sup> . Form: Respirable fraction. |

### Biological exposure indices

No exposure indices known.

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures



## Section 8. Exposure controls/personal protection

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hygiene measures</b>       | : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.                                                          |
| <b>Eye/face protection</b>    | : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles. |
| <b><u>Skin protection</u></b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Hand protection</b>        | : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.<br>Recommended: Nitrile gloves. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.                                                                                          |
| <b>Body protection</b>        | : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                                                                                                                                                                  |
| <b>Other skin protection</b>  | : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                                                                                                                                            |
| <b>Respiratory protection</b> | : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Filter type: P2                                                                                                                                        |

## Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

|                                                                 |                    |
|-----------------------------------------------------------------|--------------------|
| <b>Physical state</b>                                           | : Solid. [Powder.] |
| <b>Colour</b>                                                   | : White.           |
| <b>Odour</b>                                                    | : Odourless.       |
| <b>Odour threshold</b>                                          | : Not available.   |
| <b>pH</b>                                                       | : Not available.   |
| <b>Melting point/freezing point</b>                             | : 2040°C (3704°F)  |
| <b>Boiling point or initial boiling point and boiling range</b> | : 3000°C (5432°F)  |
| <b>Flash point</b>                                              | : Not applicable.  |
| <b>Evaporation rate</b>                                         | : Not available.   |
| <b>Flammability</b>                                             | : Not available.   |
| <b>Lower and upper explosion limit/flammability limit</b>       | : Not applicable.  |
| <b>Vapour pressure</b>                                          | : Not applicable.  |



## Section 9. Physical and chemical properties and safety characteristics

**Relative vapour density** : Not applicable.

**Relative density** : 3.97

**Density** : 3.97 g/cm<sup>3</sup>

**Solubility(ies)** :

| Media | Result      |
|-------|-------------|
| water | Not soluble |

**Solubility in water** : 0.00002 g/l [OECD 105]

**Miscible with water** : No.

**Partition coefficient: n-octanol/water** : Not available.

**Auto-ignition temperature** : Not applicable.

**Decomposition temperature** : Not available.

**Viscosity** : Dynamic (room temperature): Not applicable.  
Kinematic (room temperature): Not applicable.  
Kinematic (40°C (104°F)): Not applicable.

**Flow time (ISO 2431)** : Not available.

**Molecular weight** : 101.96 g/mole

### Particle characteristics

**Median particle size** : Not available.

### Other information

**Physical/chemical properties comments** : No additional information.

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerisation will not occur.

**Conditions to avoid** : No specific data.

**Incompatible materials** : No specific data.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.



## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

**Product/ingredient name**

aluminium oxide

**Result**

**Rat - Oral - LD50**

>5000 mg/kg

**Rat - Inhalation - LC50 Dusts and mists**

>2.3 mg/l [4 hours]

**Conclusion/Summary[Product]** : Not available.

#### Skin corrosion/irritation

**Conclusion/Summary[Product]** : Not available.

#### Serious eye damage/eye irritation

**Conclusion/Summary[Product]** : Not available.

#### Respiratory corrosion/irritation

**Conclusion/Summary[Product]** : Not available.

#### Respiratory or skin sensitization

**Skin**

**Conclusion/Summary[Product]** : Not available.

**Respiratory**

**Conclusion/Summary[Product]** : Not available.

#### Germ cell mutagenicity

**Conclusion/Summary[Product]** : Not available.

#### Carcinogenicity

**Conclusion/Summary[Product]** : Not available.

#### Reproductive toxicity

**Conclusion/Summary[Product]** : Not available.



## Section 11. Toxicological information

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

### Potential acute health effects

- |                     |                                                                                                                                          |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.                   |
| <b>Inhalation</b>   | : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. |
| <b>Skin contact</b> | : No known significant effects or critical hazards.                                                                                      |
| <b>Ingestion</b>    | : No known significant effects or critical hazards.                                                                                      |

### Symptoms related to the physical, chemical and toxicological characteristics

- |                     |                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : Adverse symptoms may include the following:<br>irritation<br>redness                    |
| <b>Inhalation</b>   | : Adverse symptoms may include the following:<br>respiratory tract irritation<br>coughing |
| <b>Skin contact</b> | : No specific data.                                                                       |
| <b>Ingestion</b>    | : No specific data.                                                                       |

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### **Short term exposure**

- |                                    |                  |
|------------------------------------|------------------|
| <b>Potential immediate effects</b> | : Not available. |
| <b>Potential delayed effects</b>   | : Not available. |

#### **Long term exposure**

- |                                    |                  |
|------------------------------------|------------------|
| <b>Potential immediate effects</b> | : Not available. |
| <b>Potential delayed effects</b>   | : Not available. |

### Potential chronic health effects

**Conclusion/Summary[Product]** : Not available.



## Section 11. Toxicological information

|                              |                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------|
| <b>General</b>               | : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. |
| <b>Carcinogenicity</b>       | : No known significant effects or critical hazards.                                    |
| <b>Mutagenicity</b>          | : No known significant effects or critical hazards.                                    |
| <b>Reproductive toxicity</b> | : No known significant effects or critical hazards.                                    |

### Numerical measures of toxicity

#### Acute toxicity estimates

N/A

## Section 12. Ecological information

### Toxicity

#### Product/ingredient name

aluminium oxide

#### Result

**Acute - EC50 - Fresh water** Effect: Intoxication  
 Daphnia - Water flea - *Daphnia magna* OECD  
 - Neonate  
Age: <24 hours  
 114.357 mg/l [48 hours]  
**Acute - EC50**  
 Algae - *Selenastrum capricornutum*  
 >100 mg/l [72 hours]  
**Acute - LC50**  
 Fish - *Salmo trutta*  
 >100 mg/l [96 hours]

**Conclusion/Summary[Product]** : Not available.

### Persistence and degradability

**Conclusion/Summary[Product]** : Not available.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| aluminium oxide         | -                 | -          | Not readily      |

### Bioaccumulative potential

Not available.

### Mobility in soil

**Soil/water partition coefficient** : Not available.

### Other adverse effects



## Section 12. Ecological information

No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                            | UN             | IMDG           | IATA           |
|----------------------------|----------------|----------------|----------------|
| UN number                  | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name    | -              | -              | -              |
| Transport hazard class(es) | -              | -              | -              |
| Packing group              | -              | -              | -              |
| Environmental hazards      | No.            | No.            | No.            |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not available.

## Section 15. Regulatory information

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.



## Section 15. Regulatory information

### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Other information

### History

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Date of issue/Date of revision</b> | : 2026/03/20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Date of previous issue</b>         | : 2024/10/04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Version</b>                        | : 1.05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Prepared by</b>                    | : Sphera Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Key to abbreviations</b>           | : ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>GHS = Globally Harmonized System of Classification and Labelling of Chemicals<br>IATA = International Air Transport Association<br>IBC = Intermediate Bulk Container<br>IMDG = International Maritime Dangerous Goods<br>IMO = International Maritime Organization<br>LogPow = logarithm of the octanol/water partition coefficient<br>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)<br>N/A = Not available<br>SGG = Segregation Group<br>UN = United Nations |

### Procedure used to derive the classification

| Classification  | Justification |
|-----------------|---------------|
| Not classified. |               |

**References** : GHS - Globally Harmonised System of Classification and Labelling of Chemicals - Version : 9.  
International transport regulations

🔍 Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

