Activated Alumina — Safety Data Sheet (SDS)

1. Identification of the Substance and of the Company

- **Product Identification**
  Synonyms: Aluminum oxide, hydrate; Activated Alumina
- **Supplier/Manufacturer Information**
  - **Company:** Henan CarbonFresh Activated Carbon Co., Ltd.
  - **Website:** https://www.carbonfreshcn.com/
  - **Email:** info@carbonfreshcn.com
  - **Phone:** (+86) 155-3801-7198
  - **Address:** Enterprise Headquarters Base, Innovation Park, High-tech Zone, Zhengzhou, Henan, China

2. Hazard Identification

2.1 Classification of the substance or mixture
According to GHS (per 29 CFR 1910 OSHA HCS):
Not a hazardous substance or mixture. Not classified under GHS.
2.2 GHS label elements (including precautionary statements)
Not a hazardous substance or mixture. No GHS labeling required.
2.3 Other hazards not otherwise classified (HNOC)
No other specific hazards known when stored and handled in accordance with this SDS and industry practices.
Per the 1994 OSHA Hazard Communication Standard (29 CFR 1910.1200):
Emergency Overview:
Warning: Harmful if inhaled; may cause breathing difficulties. Inhalation of dust may cause respiratory tract irritation. Prolonged or repeated exposure to dust may result in lung damage. Contact with eyes or skin may cause mechanical irritation. Avoid inhaling dust; avoid contact with skin, eyes, and clothing.

3. Composition/Information on Ingredients

- **Chemical identity:** Al2O3
- **Common name:** Activated Alumina
- **CAS No.:** 1344-28-1
- **EC No.:** 215-691-6

4. First-Aid Measures

4.1 Description of first-aid measures
- **General advice:** Remove contaminated clothing. Consult a qualified medical professional. Present this SDS upon medical consultation.
- **Ingestion:** Not considered a hazard under normal use. If large amounts are ingested, seek medical attention.
- **Skin contact:** Wash with soap and water. If irritation persists, seek medical advice.
- **Eye contact:** Rinse cautiously with plenty of water. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If irritation occurs, seek medical attention.
- **Inhalation:** Move to fresh air. Assist breathing if necessary and seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed
- See labeling (Section 2.2) and/or Section 11.

4.3 Indication of any immediate medical attention and special treatment needed
- Advice to doctor: Symptomatic treatment (decontamination, support of vital functions); no specific antidote.

5. Firefighting Measures

5.1 Extinguishing media
- Suitable extinguishing media: Use any media suitable for surrounding fire.

5.2 Special hazards arising from the substance or mixture
- Fire hazard: None known.
- Explosion hazard: None known.

5.3 Advice for firefighters
- Follow standard firefighting procedures.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
- Use personal protective equipment. Avoid inhalation of dust. Ensure adequate ventilation. For personal protection, see Section 8.

6.2 Environmental precautions
- Prevent widespread dispersion (e.g., by containment or barriers). Do not allow to enter sewers, surface, or groundwater. Collect contaminated fire-fighting or rinsing water.

6.3 Methods and materials for containment and cleaning up
- Use suitable tools to collect spilled solids into appropriate waste containers. To minimize dust generation, vacuum if possible. Dispose of in accordance with local/regional regulations.

7. Handling and Storage

7.1 Precautions for safe handling
- Avoid contact with skin and eyes. Avoid dust generation. Avoid inhaling dust.

7.2 Conditions for safe storage, including any incompatibilities
- Store separately from reducing agents.
- Do not store bulk bags (FIBCs) outdoors; UV exposure and adverse conditions can weaken bag strength and lead to failure.
- Suitable container materials: carbon steel (iron), low-density polyethylene (LDPE), high-density polyethylene (HDPE).
- Store in a general chemical storage area. Avoid storage at temperatures above 35 ° C. Keep container tightly closed, cool, well-ventilated, and dry.

7.3 Specific end use(s)
- None other than those identified in Section 1.2.

8. Exposure Controls/Personal Protection

8.1 Control parameters/Occupational exposure limits
- OSHA PEL (Activated Alumina):
  - 5 mg/m³ (respirable fraction, TWA)
  - 15 mg/m³ (total dust, TWA)
  - 1 mg/m³ (TLV)

Possible effects: lower respiratory tract irritation; pneumoconiosis; neurotoxicity; not classifiable as to human carcinogenicity.

8.2 Engineering controls
- Use process enclosure, local exhaust ventilation, or other engineering controls to keep airborne concentrations below recommended limits. If operations generate dust, fumes, or mists, ventilate to reduce exposure. Follow good industrial hygiene and safety practices. Wash hands during breaks and at the end of shifts.

8.3 Individual protection measures (PPE)

- Safety glasses, lab coat, and a particulate respirator. Ensure respiratory protection is NIOSH-approved or equivalent.

9. Physical and Chemical Properties

9.1 Basic physical and chemical properties

- **Physical state:** Solid
- **Color:** Off-white
- **Odor:** Odorless
- **Odor threshold:** No data
- **pH:** 9.4–10.1 (5% slurry)
- **Melting point:** No data
- **Freezing point:** No data
- **Initial boiling point:** 2050 ° C
- **Flash point:** No data
- **Evaporation rate:** No data
- **Flammability (solid/gas):** Non-flammable
- **Explosive limits:** No data
- **Vapor pressure:** Not applicable
- **Vapor density:** Not applicable
- **Relative density:** No data
- **Solubility:** Insoluble
- **Partition coefficient (n-octanol/water):** No data
- **Auto-ignition temperature:** No data
- **Decomposition temperature:** No data
- **Viscosity:** No data

10. Stability and Reactivity

10.1 Reactivity

Moisture sensitive (adsorbs moisture with heat release).

10.2 Chemical stability

Stable under normal ambient conditions and anticipated storage and handling conditions.

10.3 Possibility of hazardous reactions

None known.

10.4 Conditions to avoid

Avoid dust accumulation and dust formation.

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products

Not anticipated.

11. Toxicological Information

11.1 Information on toxicological effects

Primary routes of exposure: Solids/liquids may enter the body via ingestion and inhalation, and may also contact eyes or skin. Gases may be inhaled and contact eyes. Liquefied gases may contact skin.

Acute toxicity/effects:

- Assessment: Essentially non-toxic by single dermal exposure; essentially non-toxic by inhalation; essentially non-toxic by single ingestion.

- Oral (aluminum oxide): LD50 (rat) > 10,000 mg/kg (similar to OECD 401); data from the substance preparation; no mortality; no systemic toxicity.
- Inhalation (aluminum oxide): LC50 (rat, 4 h, dust aerosol) > 2.3 mg/L (similar to OECD 403); no mortality.

Irritation/Corrosion: Dust inhalation may cause respiratory irritation, cough, and breathing difficulty. Eye/skin contact may cause mechanical irritation.

Chronic toxicity/effects:

- Other information: The product has not been tested as a whole; toxicological information is derived from properties of the components. Based on available data and acknowledging some data gaps for individual components, no hazards beyond existing labeling are anticipated to our current knowledge and experience.

Symptoms of exposure: No significant effects known in humans

12. Ecological Information

12.1 Toxicity

- **Fish (aluminum oxide):** LC50 (96 h) > 218.64 mg/L, fathead minnow (semi-static, acute); based on data for structurally/chemically similar substances; test concentrations exceeded maximum solubility.
- **Aquatic invertebrates (aluminum oxide):** NOEC (48 h) > 100 mg/L, Daphnia magna (OECD 202, static); test concentrations exceeded maximum solubility; effect data based on nominal concentrations.
- **Aquatic plants (aluminum oxide):** NOEC (72 h, growth rate) > 100 mg/L, Pseudokirchneriella subcapitata (OECD 201, static); test concentrations exceeded maximum solubility; effect data based on nominal concentrations.
- **Chronic toxicity to fish (aluminum oxide):** EC10 (7 d) = 0.0938 mg/L, fathead minnow (semi-static).
- **Chronic toxicity to aquatic invertebrates (aluminum oxide):** NOEC (21 d) = 0.076 mg/L, Daphnia magna (OECD 211, semi-static).
- **Note:** Some data are based on analytically measured concentrations; the product has not been tested as a whole, and conclusions are derived from similar substances.

12.2 Persistence and degradability

- **Biodegradation/removal in water:** Not applicable to inorganic substances.
- **Additional information:** The product has not been tested as a whole; ecotoxicological information is derived from component properties. Despite data gaps for individual components, no hazards beyond existing labeling are anticipated based on current knowledge and experience.

13. Disposal Considerations

13.1 Waste treatment methods

- Product: Dispose of in accordance with federal, state, and local environmental regulations. All waste must be evaluated for applicable hazard classifications.

14. Transport Information

- **DOT (U.S.):** Not regulated as a hazardous material.
- **IMDG:** Not regulated as a dangerous good.
- **Transport hazard class:** Not applicable.
- **Packing group:** Not applicable.
- **Environmental hazards:** See Section 12.
- **Bulk transport:** Not applicable.
- **Special precautions for user:** Not applicable

15. Regulatory Information

15.1 U.S. regulations

- **SARA 302 components:** No reporting required under SARA Title III, Section 302.
- **SARA 313:** The following component is subject to reporting under SARA Title III, Section 313: Aluminum oxide (CAS 1344-28-1; revision date 1994-04-01).
- **Massachusetts Right-to-Know:** Aluminum oxide (CAS 1344-28-1; 1994-04-01).
- **Pennsylvania Right-to-Know:** Aluminum oxide (CAS 1344-28-1; 1994-04-01).
- **New Jersey Right-to-Know:** Aluminum oxide (CAS 1344-28-1; 1994-04-01).
- **California Proposition 65:** This product does not contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.
- **TSCA:** Listed (published/registered).

15.2 Other classifications

- **HMIS (U.S.):** Health 1; Fire 0; Reactivity 0.
- **NFPA (U.S.):** Health 1; Flammability 0; Reactivity 0.
- **WHMIS (Canada):** Class D, Division 2, Subdivision B.

16. Disclaimer

The information in this Safety Data Sheet is based on our best knowledge and current regulations at the time of preparation and is provided solely as guidance on health, safety, and environmental considerations for this product. It does not constitute a warranty of technical performance or fitness for a particular purpose. As specific conditions of use are beyond the supplier’s control, users are responsible for ensuring safe use of the product and compliance with applicable laws and regulations.