Ammonium Persulfate MSDS Material Safety Data Sheet

1. Product Name and Identification

Product Name: Ammonium Persulfate
Synonyms: Diammonium peroxydisulfate
Chemical Formula: (NH4)2S2O8
CAS Number: 7727-54-0
Intended Use: Polymerization initiator, cleaning agent, etching processes, and other industrial purposes.

2. Composition/Ingredients

Chemical Name: Ammonium Persulfate

- **CAS Number:** 7727-54-0
- **Composition:** > 98%
  Other associated impurities are negligible under standard industrial conditions.

3. Hazards Identification

Hazard Classification:

- May accelerate combustion as an oxidizer.
- Harmful if swallowed or inhaled.
- May cause irritation to skin and eyes.
- Can cause respiratory discomfort or allergic reactions through prolonged exposure.

Precautionary Overview:

- Handle with care as dust and vapors can be hazardous.
- Avoid contact with other chemicals or materials that could react violently.

Routes of Exposure:

- Eyes, skin, respiratory system, ingestion.

4. First Aid Measures

If in Eyes: Rinse thoroughly with water for several minutes. Remove contact lenses if present, then continue to rinse. Seek medical help if irritation persists.
If on Skin: Wash affected areas thoroughly with water and soap. Remove contaminated clothing. If irritation develops, get medical attention.

If Inhaled: Move the person to fresh air immediately. If breathing is difficult, seek medical attention at once.
If Swallowed: Do not induce vomiting. Rinse the mouth with water and drink small amounts of water. Obtain medical care promptly.

5. Handling and Storage

Handling:

- Minimize dust generation and accumulation.
- Use in a well-ventilated area and away from incompatible chemicals.
- Take measures to avoid direct skin and eye contact.

Storage:

- Store in original containers in a cool, dry, well-ventilated space.
- Keep away from moisture, heat, and exposure to incompatible substances such as flammable materials or reducing agents.

6. Exposure Controls/Personal Protection

Control Measures:

- Use effective ventilation or extraction systems to prevent dust buildup.
- Maintain work environment free from airborne ammonium persulfate levels.

Personal Protective Equipment (PPE):

- **Eye Protection:** Safety goggles to prevent particulate contact.
- **Respiratory Protection:** Approved respirators if ventilation is inadequate.
- **Skin Protection:** Wear gloves and clothing that resists chemical exposure.
- **Hygienic Practices:** Clean all exposed areas thoroughly after handling. Avoid eating or drinking during use.

7. Physical and Chemical Properties

- **Appearance:** White crystalline solid
- **Odor:** None
- **Solubility in Water:** Highly soluble
- **Melting Point:** Decomposes before reaching melting point

- **pH (aqueous solution):** 3.0-4.0
- **Flammability:** Non-flammable but supports combustion with other materials.
- **Density:** ~1.98 g/cm³
- **Vapor Pressure:** Negligible

8. Stability and Reactivity

Chemical Stability: Stable under normal handling and storage conditions.
Reactivity Hazards: Reactive with reducing agents and combustible materials; may cause intense heat or fire.
Conditions to Avoid: High temperatures, moisture, and incompatible materials.
Decomposition Products: Can release toxic gases like sulfur oxides and ammonia if decomposed by heat or chemical reactions.

9. Toxicological Information

Primary Effects on Health:

- Eye irritation might cause redness and discomfort.
- Skin contact may result in rashes or allergic reactions after repeated exposure.
- Dust inhalation can irritate airways or provoke asthma-like symptoms.

Toxicity Data:

- Oral ingestion can be harmful; prompt medical care is advised.
- Long-term exposure to significant amounts could intensify respiratory conditions.

Carcinogenic Potential: There is no established link between this compound and carcinogenesis.

10. Disposal Considerations

Waste Treatment: Dispose of in an environmentally safe way, avoiding any release into water sources. Treat as hazardous waste and comply with local regulations.
Container Handling: Containers should not be reused. Empty packaging must be thoroughly cleaned before disposal to prevent contamination risks.

Disclaimer: The information provided in this MSDS is a guide to workplace safety concerning Ammonium Persulfate. It may not cover all conditions and variables encountered in workplace environments. Always consult safety professionals and adhere to local safety protocols for complete guidance.