



OCI Company Ltd.

Material Safety Data Sheet

# MSDS

## Ammonium Persulfate

### Section 1 - Chemical Product and Company Identification

TRADE NAMES : Ammonium Persulfate

Recommended use : Not available

Restriction of use : Not available

Company Identification

Company : OCI Company Ltd.

Address : 230, Dokbae-ro, Nam-gu, Incheon, KOREA

Tel No. : 82 - 32 - 860 - 6114

### Section 2 - Hazards Identification

- 1) Hazard Classification
- Oxidizing solids : 3
  - Acute toxicity, oral : 4
  - Skin corrosion / irritation : 2
  - Respiratory sensitization : 1
  - Skin sensitization : 1
  - Specific target organ toxicity following single exposure : 3 (Respiratory System)
  - Specific target organ toxicity following repeated exposure : 1

2) Warning signal

Symbol



Signal word

Danger

Hazard statement

H272 May intensify fire; oxidizer

H302 Harmful if swallowed

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 May cause respiratory irritation

H372 Causes damage to organs through prolonged or repeated exposure

Prevention precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P220 Keep/Store away from clothing/.../combustible materials.

P221 Take any precaution to avoid mixing with combustibles/...

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P285 In case of inadequate ventilation wear respiratory protection.

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P314 Get medical advice/attention if you feel unwell.

P321 Specific treatment (see on this label).

P330 Rinse mouth.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

P362 Take off contaminated clothing and wash before reuse.

P363 Wash contaminated clothing before reuse.

P370+P378 In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container to the related laws.

3) NFPA

Health Rating	2
Flammability Rating	1
Reactivity Rating	1

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**Section 3 - Composition, Information on Ingredients**

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COMPONENT : Ammonium Persulfate

CAS No. : 7727-54-0

PERCENTAGE : 100

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**Section 4 - First Aid Measures**

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**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance. Ensure that emergency personnel are aware of the material involved, and take precautions to protect

themselves.

**Ingestion:** Call a physician or poison control center immediately. Do not induce vomiting without advice from poison control center. Never give liquid to an unconscious person.

**Inhalation:** Move to fresh air. Get medical attention if symptoms persist. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary.

**Skin contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

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

**Symptoms:** Irritating to eyes, respiratory system and skin.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Symptoms may be delayed. Treat symptomatically.

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**Section 5 - Fire Fighting Measures**

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**General fire hazards:** Oxidizing material. In case of fire and/or explosion do not breathe fumes.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:** Water.

**Specific hazards arising from the chemical:** Strong oxidizer - contact with other material may cause fire. Explosion risk in case of fire.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

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**Section 6 - Accidental Release Measures**

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**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Ventilate closed spaces before entering them. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

**Methods and material for containment and cleaning up:** Remove sources of ignition. Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Use only non-sparking tools.

**Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

**Environmental precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

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**Section 7 - Handling and Storage**

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**Precautions for safe handling:** Do not taste or swallow. Wash hands thoroughly after handling. Avoid contact

with eyes. Keep away from food, drink and animal feeding stuffs. Keep away from combustible material. Do not eat, drink or smoke when using the product. Do not smoke, use open fire or other sources of ignition. Use personal protective equipment as required. See Section 8 of the MSDS for Personal Protective Equipment. Observe good industrial hygiene practices. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Wear protective gloves/protective clothing/eye protection/face protection. Take any precaution to avoid mixing with combustibles. Wear fire/flammable resistant/retardant clothing. Avoid contact with skin. Avoid breathing dust/fume/gas/mist/vapors/spray.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a cool, well-ventilated place. Keep container dry. Store away from incompatible materials. Eliminate sources of ignition.

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## Section 8 - Exposure Controls, Personal Protection

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### Control parameters

#### Occupational exposure limits

Chemical identity	Type	Exposure	Limit values	Source
AMMONIUM PERSULFATE - as persulfate	TWA	0.1 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)	

**Appropriate engineering controls** No data available.

#### Individual protection measures, such as personal protective equipment

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles) and a face shield.

#### Skin protection

**Hand protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

**Hygiene measures:** Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Avoid contact with eyes. Avoid contact with skin.

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## Section 9 - Physical and Chemical Properties

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### Appearance

Physical state: Solids

Form: Crystals or powder

Color: White

Odor: Odorless

Odor threshold: No data available.

pH: Weakly acidic

Melting point/freezing point: No data available.

Initial boiling point and boiling range: No data available.

Flash Point: No data available.

Evaporation rate: Not applicable

Flammability (solid, gas): No data available.

Upper/lower limit on flammability or explosive limits : - / -

Vapor pressure: No data available.

Vapor density: Not applicable

Relative density: 1.9

Solubility(ies)

Solubility in water: 58.2 g/100ml (20°C)

Solubility (other): No data available.

Partition coefficient (n-octanol/water): No data available.

Auto-ignition temperature: No data available.

Decomposition temperature: 120°C

Viscosity: No data available.

Molecular weight: 228.2

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## Section 10 - Stability and Reactivity

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**Reactivity:** Reacts with water.

**Chemical stability:** Reacts with Moisture

**Possibility of hazardous reactions:** Hazardous polymerization does not occur.

**Conditions to avoid:** Heat, sparks, flames. Contact with combustibles. Moisture. Contact with incompatible materials.

**Incompatible materials:** Reducing agents. Flammable/combustible material. Organic compounds. Aluminum. Water. Powdered metal. Peroxides.

**Hazardous decomposition products:** Nitrogen Oxides Oxides of sulfur.

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## Section 11 - Toxicological Information

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### Information on likely routes of exposure

**Ingestion:** Harmful if swallowed. May cause irritation of the gastrointestinal tract.

**Inhalation:** May be harmful if inhaled. May cause drowsiness or dizziness.

**Skin contact:** Harmful in contact with skin. Causes skin irritation.

**Eye contact:** Causes serious eye irritation.

### Information on toxicological effects

#### Acute toxicity (list all possible routes of exposure)

**Oral Product:** LD50 689 mg/kg Rat

**Dermal Product:** LD50 > 2000 mg/kg Rat.

**Inhalation Product:** No data available.

**Repeated dose toxicity Product:** No data available.

**Skin corrosion/irritation Product:** Causes skin irritation.

**Serious eye damage/eye irritation Product:** Causes serious eye irritation.

**Respiratory or skin sensitization Product:** May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Carcinogenicity Product:** This substance has no evidence of carcinogenic properties.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):**

No carcinogenic components identified

**Germ cell mutagenicity**

**In vitro Product:** No mutagenic components identified

**In vivo Product:** No mutagenic components identified

**Reproductive toxicity Product:** No components toxic to reproduction

**Specific target organ toxicity - single exposure Product:** Respiratory System

**Specific target organ toxicity - repeated exposure Product:** Respiratory System , NOAEL > 80 mg/kg (rat)

**Aspiration hazard Product:** Not classified

**Other effects:** None known.

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**Section 12 - Ecological Information**

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**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish Product:** No data available.

**Specified substance(s):**

AMMONIUM PERSULFATE

LC 50 (Rainbow trout,donaldson trout (*Oncorhynchus mykiss*), 48 h): 355 mg/l Mortality

LC 50 (Guppy (*Poecilia reticulata*), 48 h): 732 mg/l Mortality

**Aquatic invertebrates Product:** No data available.

**Specified substance(s):**

AMMONIUM PERSULFATE

LC 50 (Cyclopoid copepod (*Cyclops strenuus*), 48 h): 170 mg/l Mortality

LC 50 (Water flea (*Daphnia pulex*), 48 h): 87 mg/l Mortality

**Chronic hazards to the aquatic environment:**

**Fish Product:** No data available.

**Aquatic invertebrates Product:** No data available.

**Toxicity to Aquatic Plants Product:** No data available.

**Persistence and degradability**

**Biodegradation Product:** There are no data on the degradability of this product.

**BOD/COD ratio Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration factor (BCF) Product:** No data available on bioaccumulation.

**Partition coefficient n-octanol / water (log Kow) Product:** No data available.

**Mobility in soil:** The product is water soluble and may spread in water systems.

**Other adverse effects:** Harmful to aquatic life with long lasting effects.

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**Section 13 - Disposal Considerations**

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**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose

of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Contaminated packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

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## Section 14 - Transport Information

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UN Number: 1444

Shipping Name: AMMONIUM PERSULPHATE

Hazard Class: 5.1

Packing Group: III

Marine Pollutant: : No

Safety measures : F-A, S-Q

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## Section 15 - Regulatory Information

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### US federal regulations

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

##### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

##### CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

##### Superfund amendments and reauthorization act of 1986 (SARA)

###### Hazard categories

X Acute (Immediate)                      X Chronic (Delayed)                      X Fire    Reactive                      Pressure Generating

###### SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

###### SARA 304 Emergency release notification

None present or none present in regulated quantities.

###### SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
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AMMONIUM PERSULFATE	500 lbs
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###### SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
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AMMONIUM PERSULFATE	10000 lbs	25000 lbs.
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###### Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

###### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

### US state regulations

#### US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

#### US. New Jersey Worker and Community Right-to-Know Act

AMMONIUM PERSULFATE	Listed
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#### US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

**US. Pennsylvania RTK - Hazardous Substances**

No ingredient regulated by PA Right-to-Know Law present.

**US. Rhode Island RTK**

No ingredient regulated by RI Right-to-Know Law present.

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

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**Section 16 - Other Information**

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Sources : KOSHA, National Emergency Management Agency

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