

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product identifier

Product Description: Ammonium persulfate
Synonyms: Ammonium peroxydisulfate; Peroxydisulfuric acid diammonium salt
Index No: 016-060-00-6
CAS No: 7727-54-0
EC No: 231-786-5
Molecular Formula: H8 N2 O8 S2
REACH registration number: 01-2119495973-19-XXXX

Relevant identified uses of the substance or mixture and uses advised against:

Recommended Use: Laboratory chemicals.
Sector of use: SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category: PC21 - Laboratory chemicals
Process categories: PROC15 - Use as a laboratory reagent
Environmental release category: ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against: No Information available.

Company name: Nexchem Ltd
 Unit 3 Barshaw Park
 Leycroft Road
 Leicester
 LE4 1ET
 Tel: 0116 2311130
 24/7 Emergency Tel: 0800 246 1274
 Email: sales@nexchem.co.uk

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567:

Physical hazards:	Oxidizing solids	Category 3 (H272)
Health hazards:	Acute oral toxicity	Category 4 (H302)
	Skin Corrosion/Irritation	Category 2 (H315)
	Serious Eye Damage/Eye Irritation	Category 2 (H319)
	Respiratory Sensitization	Category 1 (H334)
	Skin Sensitization	Category 1 (H317)
	Specific target organ toxicity - (single exposure)	Category 3 (H335)
Environmental hazards:	Based on available data, the classification criteria are not met.	

Full text of Hazard Statements: See section 16.

[cont...]

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Label elements:



Signal Word:

Danger.

Hazard Statements:

H272 - May intensify fire; oxidizer
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H302 - Harmful if swallowed

Precautionary Statements:

P280 - Wear protective gloves/protective clothing/eye protection/face protection
P221 - Take any precaution to avoid mixing with combustibles
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER or doctor if you feel unwell
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention

Other hazards:

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment.
Toxic to terrestrial vertebrates.
This product does not contain any known or suspected endocrine disruptors.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances:

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 & UK SI 2020/1567
Ammonium persulfate	7727-54-0	231-786-5	>95	Ox. Sol. 3 (H272) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Resp. Sens. 1 (H334) STOT SE 3 (H335)

REACH registration number: 01-2119495973-19-XXXX

Full text of Hazard Statements: See section 16.

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4. FIRST AID MEASURES

Description of first aid measures:

General Advice: If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Immediate medical attention is required.

Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. SPEEDY ACTION IS CRITICAL, GET MEDICAL AID IMMEDIATELY. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Ingestion: Do NOT induce vomiting. Call a physician or poison control centre immediately. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person.

Inhalation: Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance: give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Consult a physician if necessary.

Self-Protection of the First Aider: Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed:

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, light headedness, chest pain, muscle pain or flushing.

Indication of any immediate medical attention and special treatment needed:

Notes to Physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable Extinguishing Media: Water spray.

Extinguishing media which must not be used for safety reasons: No information available.

Special hazards arising from the substance or mixture:

Oxidiser: Contact with combustible/organic material may cause fire. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapours. May ignite combustibles (wood paper, oil, clothing, etc.).

Hazardous Combustion Products: Nitrogen oxides (NOx), Sulphur oxides, Ammonia, Oxygen.

Advice for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions:

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up:

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Keep combustibles (wood, paper, oil, etc) away from spilled material. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

Reference to other sections:

Refer to protective measures listed in Sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling:

Wear personal protective equipment/face protection. Avoid dust formation. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Keep away from clothing and other combustible materials. Pay attention to flashback. No information available.

Hygiene Measures:

When using do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

Conditions for safe storage, including any incompatibilities:

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labelled containers.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany): Class 5.1B

Specific end use(s):

Use in laboratories.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Exposure limits:

List source(s): IRE - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1.
Published by the Health and Safety Authority

Component

Ammonium persulphate

The United Kingdom

European Union

Ireland

TWA: 0.1 mg/m³ 8 hr.

STEL: 0.3 mg/m³ 15 min

Biological limit values:

This product, as supplied, does not contain any hazardous materials with biological limits established by the region-specific regulatory bodies.

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Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL):

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Ammonium persulfate 7727-54-0 (>95)				DNEL = 9.5mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Ammonium persulfate 7727-54-0 (>95)			DNEL = 0.824mg/m ³	

Predicted No Effect Concentration (PNEC):

Component	Fresh water	Fresh water Sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Ammonium persulfate 7727-54-0 (>95)	PNEC = 0.518mg/L	PNEC = 2.03mg/kg sediment dw	PNEC = 0.763mg/L	PNEC = 3.6mg/L	PNEC = 0.1mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Ammonium persulfate 7727-54-0 (>95)	PNEC = 0.0518mg/L	PNEC = 0.203mg/kg sediment dw			

Exposure controls:

Engineering Measures:	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.
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Personal protective equipment:

Eye Protection:	Goggles (European standard - EN 166)
Hand Protection:	Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection:	Impervious gloves. Inspect gloves before use. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information).
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Ensure gloves are suitable for the task:	Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination.
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Respiratory Protection:	When workers are facing concentrations above the exposure limit, they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.
Large scale/emergency use:	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type:	Particulates filter conforming to EN 143.
Small scale/Laboratory use:	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended half mask:	Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted.
Environmental exposure controls:	Prevent product from entering drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Physical State:	Powder Solid		
Appearance:	White		
Odour:	Odourless		
Odor Threshold:	No data available		
Melting Point/Range:	120 °C / 248 °F		
Softening Point:	No data available		
Boiling Point/Range:	No information available		
Flammability (liquid):	Not applicable Solid		
Flammability (solid ,gas):	No information available		
Explosion Limits:	No data available		
Flash Point:	No information available	Method:	No information available
Autoignition Temperature:	No data available		
Decomposition Temperature:	> 120°C		
pH:	3.2 100 g/L		
Viscosity:	Not applicable Solid		
Water Solubility:	582 g/L (20°C), may decompose		
Solubility in other solvents:	No information available		
Partition Coefficient (n-octanol/water):			
Vapor Pressure:	Negligible		
Density / Specific Gravity:	1.980		
Bulk Density:	900-1100 kg/m3		
Vapor Density:	Not applicable Solid		
Particle characteristics:	No data available		
Other information:			
Molecular Formula:	H8 N2 O8 S2		
Molecular Weight:	228.19		
Oxidising Properties:	Oxidiser		
Evaporation Rate:	Not applicable – Solid		

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10. STABILITY AND REACTIVITY

Reactivity: Yes.

Chemical stability: Oxidizer: Contact with combustible/organic material may cause fire. Moisture sensitive.

Possibility of hazardous reactions:

Hazardous Polymerization: No information available.

Hazardous Reactions: No information available.

Conditions to avoid: Avoid dust formation. Combustible material. Excess heat. Exposure to moisture. Incompatible products.

Incompatible materials: Reducing Agent. Metals. Peroxides. Strong oxidizing agents. Strong reducing agents. Combustible material. Acids. Alkaline.

Hazardous decomposition products: Nitrogen oxides (NO_x). Sulphur oxides. Ammonia. Oxygen.

11. TOXICOLOGICAL INFORMATION

Information on hazard classes as defined in Regulation (EC) No 1272/2008:

Product Information:

(a) acute toxicity:

Oral: Category 4

Dermal: Based on available data, the classification criteria are not met.

Inhalation: Based on available data, the classification criteria are not met.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium persulfate	LD50 = 495 mg/kg (Rat)	> 2000 mg/kg	LC50 > 2.95 mg/L (Rat) 4 h

(b) skin corrosion/irritation: Category 2

(c) serious eye damage/irritation: Category 2

(d) respiratory or skin sensitisation:

Respiratory: Category 1

Skin: Category 1
May cause sensitization by skin contact.

(e) germ cell mutagenicity: Based on available data, the classification criteria are not met.

(f) carcinogenicity: Based on available data, the classification criteria are not met.
There are no known carcinogenic chemicals in this product.

(g) reproductive toxicity: Based on available data, the classification criteria are not met.

(h) STOT-single exposure: Category 3

Results / Target organs: Respiratory system.

(i) STOT-repeated exposure: Based on available data, the classification criteria are not met.

Target Organs: None known.

(j) aspiration hazard: Not applicable.

Solid.

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Other Adverse Effects: The toxicological properties have not been fully investigated.

Symptoms / effects, both acute and delayed: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, light headedness, chest pain, muscle pain or flushing.

Information on other hazards:

Endocrine Disrupting Properties: Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

12. ECOLOGICAL INFORMATION

Toxicity:

Ecotoxicity effects: Do not empty into drains. Contains a substance which is: Harmful to aquatic organisms.
The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Ammonium persulphate	LC50: = 76.3 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 323 mg/L, 96h (Poecilia reticulata) LC50: = 103 mg/L, 96h static (Lepomis macrochirus)	EC50: = 120 mg/L, 48h (Daphnia magna)	

Persistence and degradability:

Persistence: Soluble in water, Persistence is unlikely, based on information available.

Degradability: Not relevant for inorganic substances.

Degradation in sewage treatment plant: Contains no substances known to be hazardous to the environment or not degradable in wastewater treatment plants. Contains substances known to be hazardous to the environment or not degradable in wastewater treatment plants.

Bioaccumulative potential: Bioaccumulation is unlikely.

Mobility in soil: The product is water soluble and may spread in water systems Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Results of PBT and vPvB assessment: In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment.

Endocrine disrupting properties:

Endocrine Disruptor Information: This product does not contain any known or suspected endocrine disruptors.

Other adverse effects:

Persistent Organic Pollutant: This product does not contain any known or suspected substance.

Ozone Depletion Potential: This product does not contain any known or suspected substance.

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13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Waste from Residues/Unused Products: Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging: Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC): According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

Other Information: Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

14. TRANSPORT INFORMATION

IMDG/IMO:

UN number: UN1444
UN proper shipping name: AMMONIUM PERSULPHATE
Transport hazard class(es): 5.1
Packing group: III

ADR:

UN number: UN1444
UN proper shipping name: AMMONIUM PERSULPHATE
Transport hazard class(es): 5.1
Packing group: III

IATA:

UN number: UN1444
UN proper shipping name: AMMONIUM PERSULPHATE
Transport hazard class(es): 5.1
Packing group: III

Environmental hazards: No hazards identified.

Special precautions for user: No special precautions required.

Maritime transport in bulk according to IMO instruments: Not applicable, packaged goods.

15. REGULATORY INFORMATION

Chemical safety assessment: A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted.

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Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3:

H272 - May intensify fire, oxidiser.

H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

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

H335 - May cause respiratory irritation.

Legal disclaimer:

The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.