

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 10-Dec-2009

Revision Date 06-Oct-2023

Revision Number 9

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description:	Ammonium persulfate
Cat No. :	401160000; 401160020; 401160050; 401160100; 401160250; 401161000; 401165000
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
-	

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Sector of use	Laboratory chemicals. 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

1.3. Details of the supplier of the safety data sheet

Company

UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom

EU entity/business name

Thermo Fisher Scientific Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

E-mail address

begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

Physical hazards

Ammonium persulfate

Oxidizing solids

Health hazards

Acute oral toxicity Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation Respiratory Sensitization Skin Sensitization Specific target organ toxicity - (single exposure)

Environmental hazards Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. 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

2.3. 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

Category 3 (H272)

Category 4 (H302) Category 2 (H315) Category 2 (H319) Category 1 (H334) Category 1 (H317) Category 3 (H335)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Ammonium persulfate	7727-54-0	EEC No. 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

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. 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 center 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.				
4.2. 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, lightheadedness, chest pain, muscle pain or flushing					
4.3. Indication of any immediate medical attention and special treatment needed					
Notes to Physician	Treat symptomatically.				
	SECTION 5: FIREFIGHTING MEASURES				

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray.

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

5.2. Special hazards arising from the substance or mixture

Oxidizer: 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 vapors. May ignite combustibles (wood paper, oil, clothing, etc.).

Hazardous Combustion Products

Nitrogen oxides (NOx), Sulfur oxides, Ammonia, Oxygen.

5.3. Advice for firefighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. 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.

6.2. 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.

6.3. 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.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. 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.

7.2. 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 labeled containers.

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

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. 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	The United Kingdom	European Union	Ireland
Ammonium persulfate			TWA: 0.1 mg/m ³ 8 hr.
			STEL: 0.3 mg/m ³ 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

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

See table for values

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)

See values below.

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

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

8.2. 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

Personal protective equipment

Eye Protection		Goggles (European standard - EN 166)				
Hand Protection	Protectiv	ve gloves				
Glove material Natural rubber Nitrile rubber Neoprene PVC	Breakthrough time See manufacturers recommendations	Glove thickness	EU standard EN 374	Glove comments (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)

Ensure gloves are suitable for the task: Chemical compatability, 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.

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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Powder Solid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	White Odorless No data available 120 °C / 248 °F No data available No information available Not applicable No information available No data available	Solid
Flash Point	No information available	Method - No information available

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SECTION 10: STABILITY AND REACTIVITY

10.1	I. Re	eacti	vity

Yes

10.2. Chemical stability

Ammonium persulfate

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

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous Reactions	No information available. No information available.
10.4. Conditions to avoid	Avoid dust formation. Combustible material. Excess heat. Exposure to moisture. Incompatible products.
10.5. Incompatible materials	Reducing Agent. Metals. Peroxides. Strong oxidizing agents. Strong reducing agents. Combustible material. Acids. Alkaline.

10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Sulfur oxides. Ammonia. Oxygen.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. 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

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Ammonium persulfate	LD50 = 495 mg/kg (Rat)	> 2000 mg/kg	LC50 > 2.95 mg/L (Rat) 4 h
			1
(b) skin corrosion/irritation;	Category 2		
(c) serious eye damage/irritation;	Category 2		
(d) respiratory or skin sensitization; Respiratory Skin	Category 1 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		et
	There are no known carcinogeni	c chemicals in this product	
(g) reproductive toxicity;	Based on available data, the cla	ssification criteria are not m	et
(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		
Other Adverse Effects	The toxicological properties have	e 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, lightheadedness, chest pain, muscle pain or flushing.		
11.2. Information on other hazards			
Endocrine Disrupting Properties	Assess endocrine disrupting pro		nis product does not contain ar

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

SECTION 12: ECOLOGICAL INFORMATION

12.1. 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 persulfate	LC50: = 76.3 mg/L, 96h static	EC50: = 120 mg/L, 48h	
	(Oncorhynchus mykiss)	(Daphnia magna)	
	LC50: = 323 mg/L, 96h (Poecilia		
	reticulata)		
	LC50: = 103 mg/L, 96h static		

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(Lepomis macrochirus)	

12.2. Persistence and degradability Persistence Degradability Degradation in sewage treatment plant	Soluble in water, Persistence is unlikely, based on information available. Not relevant for inorganic substances. Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.
12.3. Bioaccumulative potential	Bioaccumulation is unlikely
<u>12.4. Mobility in soil</u>	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
<u>12.5. Results of PBT and vPvB</u> assessment	In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment.
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant	This product does not contain any known or suspected substance

Persistent Organic PollutantThis product does not contain any known or suspected substanceOzone Depletion PotentialThis product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Ammonium persulfate

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.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

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IONIUM PERSULPHATE

<u>ADR</u>

<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> <u>14.4. Packing group</u>	UN1444 AMMONIUM PERSULPHATE 5.1 III
IATA	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> <u>14.4. Packing group</u>	UN1444 AMMONIUM PERSULPHATE 5.1 III
14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Ammonium persulfate	7727-54-0	231-786-5	-	-	Х	Х	KE-09815	Х	Х
Component	CAS No	TSCA	notific	ation -	DSL	NDSL	AICS	NZIoC	PICCS
Ammonium persulfate	7727-54-0	Х	ACT	IVE	Х	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Ammonium persulfate	7727-54-0	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) -	Seveso III Directive (2012/18/EC) -
		Qualifying Quantities for Major Accident	Qualifying Quantities for Safety Report

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		Notification	Requirements
Ammonium persulfate	7727-54-0	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Ammonium persulfate	WGK1	

Component	France - INRS (Tables of occupational diseases)
Ammonium persulfate	Tableaux des maladies professionnelles (TMP) - RG 65,RG 66

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

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

- H272 May intensify fire; oxidizer
- 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

Legend

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances	DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances NZIoC - New Zealand Inventory of Chemicals

Ammonium persulfate

WEL - Workplace Exposure Limit	TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists	IARC - International Agency for Research on Cancer
DNEL - Derived No Effect Level	Predicted No Effect Concentration (PNEC)
RPE - Respiratory Protective Equipment	LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%	EC50 - Effective Concentration 50%
NOEC - No Observed Effect Concentration	POW - Partition coefficient Octanol:Water
PBT - Persistent, Bioaccumulative, Toxic	vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code OECD - Organisation for Economic Co-operation and Development BCF - Bioconcentration factor	ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)
Key literature references and sources for data	

https://echa.europa.eu/information-on-chemicals Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Suppliers salety data sheet, Chemadvisor - LOLI, Merck index, RTI

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Creation Date	10-Dec-2009
Revision Date	06-Oct-2023
Revision Summary	Not applicable.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

. Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet