

SAFETY DATA SHEET

Klozur® SP

SDS # : 7775-27-1-12
Revision date: 2021-01-22
Version 1.02



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

1.1. Product Identifier

Chemical name	Disodium peroxodisulfate
Product Name	Klozur® SP
Synonyms	Sodium Peroxydisulfate; Disodium Peroxydisulfate; Peroxydisulfuric acid, disodium salt; Peroxydisulfuric acid, sodium salt
CAS-No	7775-27-1
EC-No	231-892-1
REACH registration number	01-2119495975-15-0001
Pure substance/mixture	Substance
Formula	Na ₂ O ₈ S ₂

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

Recommended Use: Polymerization initiator Etchant and cleaner for printed circuit boards Hair bleaching formulations
Secondary oil recovery Oxidizing agent for a variety of organic reactions.

Restrictions on Use No uses to be advised against were identified

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier
PeroxyChem LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
267/422-2400 (General Information)
sdsinfo-pxc@evonik.com (E-Mail General Information)

Responsible Persons
Evonik Operations GmbH
Rellinghauser Str. 1-11
45128 Essen
Germany
Tel: +49 6181 59 4787
E-mail: sds-hu@evonik.com

1.4. Emergency telephone numbers

24-Hour Health Emergency: +49 2365 49 2232

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute oral toxicity	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ systemic toxicity (single exposure)	Category 3
Oxidizing Solids	Category 3

For the full text of the H- and EUH- phrases mentioned in this Section, see Section 16.

2.2. Label Elements



Signal word:

DANGER

Hazard Statements

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

Precautionary statements

Wear protective gloves/ eye protection/ face protection
 Keep/Store away from clothing/ combustible materials
 Store locked up
 IF ON SKIN: Wash with plenty of soap and water
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician if you feel unwell

Precautionary statements

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
 P220 - Keep/Store away from clothing/ combustible materials
 P405 - Store locked up

Precautionary statements

water

2.3. OTHER INFORMATION

General Hazards

Risk of decomposition by heat or by contact with incompatible materials

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Disodium peroxodisulfate

Chemical name	EC-No	CAS-No	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Sodium Persulfate	231-892-1	7775-27-1	> 99	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) STOT SE 3 (H335) Ox. Sol. 3 (H272)	01-2119495975-15-0001
Sodium sulfate	231-820-9	7757-82-6	< 1		-

For the full text of the H- and EUH- phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1. Description of first-aid measures

General Advice	Remove from exposure, lie down. Show this material safety data sheet to the doctor in attendance.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids intermittently. Consult a physician. In case of contact, immediately flush eyes with plenty of water. If symptoms persist, call a physician.
Inhalation	Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth. Drink 1 or 2 glasses of water.

4.2. Most important symptoms and effects, both acute and delayed

Itching; Redness; Coughing and/ or wheezing

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Indication of immediate medical attention and special treatment needed, if necessary	Treat symptomatically.
---	------------------------

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Water. Cool containers with flooding quantities of water until well after fire is out.

Extinguishing media which shall not be used for safety reasons

Do NOT use water jet.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases

In case of fire, formation of sulphur oxides, nitrogen oxides, toxic pyrolysis products.

5.3. Advice for firefighters**Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear.

OTHER INFORMATION

The product is not combustible. Contact with combustible materials may intensify fires. Adjust fire fighting measures to surrounding fire, if possible. Cool endangered containers with water spray and move out of danger area. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures**

Keep off any unprotected persons. Avoid contact with the skin and the eyes. Avoid breathing dust. Wear personal protective equipment.

6.2. Environmental Precautions

Knock down dust with water spray. Avoid penetration into waterways, sewers, soil or groundwater. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and materials for containment and cleaning up

Vacuum, shovel or pump waste into a drum and label contents for disposal. Avoid dust formation. Store in closed container. Clean up spill area and treat as special waste. Dispose of waste as indicated in Section 13

Never add other substances or combustible waste to product residues.

6.4. Reference to other sections.

Dispose of waste as indicated in Section 13

7. HANDLING AND STORAGE**7.1. Precautions for Safe Handling**

Wear personal protective equipment. Avoid breathing dust. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Avoid contact with skin and eyes. Remove and wash contaminated clothing before re-use.

Additional information

Use clean plastic or stainless steel scoops only

7.2. Conditions for safe storage, including any incompatibilities**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Do not store near combustible materials. Avoid contamination of opened product. Keep away from food, drink and animal feedings. Avoid formation and deposition of dust.

Materials to avoid

Bases, Halides, Oxidizing agents, Strong reducing agents, Combustible materials.

7.3. Specific end uses

Refer to Section 1 and the Annex.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Ingredients with workplace control parameters

Chemical name	European Union	The United Kingdom	Ireland
Sodium Persulfate 7775-27-1			TWA 0.1 mg/m ³ STEL 0.3 mg/m ³ Sensitizer
Chemical name	France	Spain	Portugal
Sodium Persulfate 7775-27-1		TWA 0.1 mg/m ³	
Chemical name	Denmark	Finland	Norway
Sodium Persulfate 7775-27-1	TWA 2 mg/m ³		
Chemical name	Slovakia	Switzerland	Belgium
Sodium Persulfate 7775-27-1			TWA 0.1 mg/m ³
Chemical name	Latvia	Lithuania	Czech Republic
Sodium sulfate 7757-82-6	TWA 10 mg/m ³	TWA 10 mg/m ³	
Chemical name	Romania	Bulgaria	Russia
Sodium sulfate 7757-82-6			MAC 10 mg/m ³

DNELs - General Population

Sodium Persulfate (7775-27-1)

Exposure pattern	Route of Exposure	Description	DNEL/DMEL	Most Sensitive Endpoint
Acute - systemic	dermal	LD0	200 mg/kg bw	Acute toxicity
Acute - systemic	Inhalation	LC0	295 mg/m ³	Acute toxicity
Acute - systemic	oral	LD0	30 mg/kg bw	Acute toxicity
Acute - local	dermal	LD0	1.124 mg/cm ³	Acute toxicity
Acute - local	Inhalation	LC0	295 mg/m ³	Acute toxicity
Long term - systemic	dermal	NOAEL	91 mg/kg bw/day	repeated dose toxicity
Long term - systemic	Inhalation	NOAEC	1.03 mg/m ³	repeated dose toxicity
Long term - systemic	oral	NOAEL	9.1 mg/kg bw/day	repeated dose toxicity
Long term - local	dermal	NOAEL	0.051 mg/cm ³	repeated dose toxicity
Long term - local	Inhalation	NOAEC	1.03 mg/m ³	repeated dose toxicity

8.2. Exposure Controls

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

General information

Protective engineering solutions should be implemented and in use before personal protective equipment is considered.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators: Effective dust mask.

Eye/Face Protection

Eye protection recommended. Chemical goggles consistent with EN 166 or equivalent.

Skin and Body Protection

Wear long-sleeved shirt, long pants, socks, and shoes.

Hand Protection

Protective gloves: Neoprene gloves, Polyvinylchloride, Natural Rubber.

Hygiene measures

Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Wash hands before breaks and after shifts. Keep work clothes separate, remove contaminated clothing - launder after open handling of product.

Environmental exposure controls

The product should not be allowed to enter drains, water courses or the soil.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Crystalline solid
Color	White
Physical State	Solid
Odor	odorless
Odor threshold	Not applicable
pH	No information available 6.0 (1% solution)
Flash point	Not flammable
Melting Point/Range	Decomposes on heating 180 °C
Freezing Point	Not applicable
Boiling Point/Range	No information available Decomposes on heating
Autoignition temperature	No evidence of combustion up to 600°C
Explosive properties	Not explosive
Vapor pressure	6.07E-30 mm Hg at 25°C
Vapor density	No information available
Density	2.59 g/cm ³ (crystal density) 1.68
Partition coefficient	No information available
Water solubility	42 % @ 25 °C
Viscosity	No information available (Solid)
Evaporation Rate	No information available
Decomposition temperature	> 100 °C (assume)

9.2. OTHER INFORMATION

Bulk Density	1.12 g/cm ³ (loose)
Molecular weight	238.1
VOC content (%)	Not applicable

10. STABILITY AND REACTIVITY

10.1. Reactivity

Strong oxidizer.

10.2. Chemical Stability

Stable under recommended storage conditions. Unstable if heated. Unstable on exposure to moisture. Unstable in presence of contamination.

10.3. Possibility of Hazardous Reactions

Use of persulfates in chemical reactions requires appropriate precautions and design considerations for pressure and thermal relief.

Decomposing persulfates will evolve large volumes of gas and/or vapor, can accelerate exponentially with heat generation, and create significant and hazardous pressures if contained and not properly controlled or mitigated.

Use with alcohols in the presence of water has been demonstrated to generate conditions that require rigorous adherence to process safety methods and standards to prevent escalation to an uncontrolled reaction.

10.4. Conditions to avoid

Heat. (decomposes at 275 °C); Moisture.

10.5. incompatible materials

Bases, Halides, Oxidizing agents, Strong reducing agents, Combustible materials.

10.6. Hazardous Decomposition Products

Oxygen which supports combustion; Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information.

LD50 Dermal > 10,000 mg/kg (rabbit) (Sodium Persulfate)
LD50 Oral 895 mg/kg (rat) (Sodium Persulfate)
LC50 Inhalation > 5.1 mg/L (rat) (4-hr) (Sodium Persulfate)

Skin Contact Irritating to skin. Persulfates in general, specifically diammonium persulfate and dipotassium persulfate, exhibited skin irritation properties in human case reports, following occupational exposure and consumer use. Irritating (rabbit).

Eye Contact Irritating to eyes. Has been shown to exhibit eye irritation properties in human case reports following occupational exposure and consumer use. Slightly or non-irritating (rabbit).

Inhalation May cause irritation of respiratory tract. Respiratory irritation has been seen in workers exposed to persulfates. In animals, diammonium persulfate, produced pathological respiratory irritation in a subchronic study.

Subchronic toxicity

Oral (NOAEL) = 131.5 mg/kg bw (Sodium Persulfate)

Inhalation (NOAEC) = 10.3 mg/m³ (Ammonium Persulfate) Dermal: No data available

Chronic toxicity

Sensitization

Sensitizing to skin and respiratory system.

Target organ effects

Eyes. Skin. Respiratory System.

Carcinogenicity

Did not show carcinogenic effects in animal experiments.

Mutagenicity

In vivo tests did not show mutagenic effects.

Reproductive toxicity

Diammonium persulfate did not affect fertility or the developing fetus in animal studies (NOAEL: 250 mg/kg bw).

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Sodium Persulfate (7775-27-1)				
Active Ingredient(s)	Duration	Species	Value	Units
Sodium Persulfate	96 h LC50	Rainbow trout	163	mg/L
Sodium Persulfate	48 h LC50	Daphnia magna	133	mg/L
Sodium Persulfate	96 h LC50	Grass shrimp	519	mg/L
Sodium Persulfate	72 h EC50	Algae Selenastrum capricornutum	116	mg/L

12.2. Persistence and degradability

Biodegradability does not pertain to inorganic substances.

12.3. Bioaccumulative potential

Does not bioaccumulate.

12.4. Mobility in soil

Dissociates into ions.

12.5. Results of PBT and vPvB assessment

PBT/vPvB assessment is not required for inorganic substances.

12.6. Other Adverse Effects

None known.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products Dispose of as hazardous waste in compliance with local and national regulations.

Product / Packaging disposal Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated Packaging Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

ADR/RID

UN/ID no	UN 1505
Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

IMDG/IMO

UN/ID no	1505
Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

ICAO/IATA

UN/ID no	1505
Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

ADN

UN/ID no	1505
Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

Transport Symbol



Environmental Hazards	This product contains no chemical substance that is listed as a marine pollutant according to DOT
Special Precautions for users	According to United Nations "Recommendations on the transport of dangerous goods"
Transport in bulk according to MARPOL 73/78 and the IBC Code	See IMDG above

15. REGULATORY INFORMATION

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

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELI NCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)	NZIoC (New Zealand)
Sodium Persulfate 7775-27-1	X	X	231-892-1	X	X	X	X	X	X
Sodium sulfate 7757-82-6	X	X	231-820-9	X	X	X	X	X	X

Directive 2008/98/EC on waste

Applicable

Major Accidents (Directive 2012/18/EU)

Included for storage of quantities exceeding 50 Tm

CWC (Chemical Weapons Convention) - Annex on Chemicals

Not applicable

15.2. Chemical Safety Report

A Chemical Safety Assessment has been carried out for this substance.

16. OTHER INFORMATION

Full text of H-phrases referred to in sections 2 and 3

H272 - May intensify fire; oxidizer

H302 - Harmful if swallowed

H315 - Causes skin irritation

H319 - Causes serious eye irritation

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

H317 - May cause an allergic skin reaction

H335 - May cause respiratory irritation

Issuing Date: 2021-02-09

Restrictions on Use

This product's foreseen or recommended applications are: Polymerization initiator, Etchant and cleaner for printed circuit boards, Hair bleaching formulations, Secondary oil recovery, Oxidizing agent for a variety of organic reactions.

Additional information

This Safety Data Sheet has been prepared according to Regulation (EC) 1907/2006 and Regulation (EU) 453/2010

Revision date: 2021-01-22

Revision note

SDS sections updated: 1

List of Abbreviations and Acronyms

ATE Acute Toxicity Estimate
 ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
 AND European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 CE50 Concentración Efectiva Media
 CEN European Committee for Standardisation
 C&L Classification and Labelling
 CLP Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
 CLV Ceiling Limit Value Par CAS# Chemical Abstracts Service number
 CMR Carcinogen, Mutagen, or Reproductive Toxicant
 CSA Chemical Safety Assessment
 CSR Chemical Safety Report
 DNEL Derived No Effect Level
 DOT Department of Transportation
 DPD Dangerous Preparations Directive 1999/45/EC
 DSD Dangerous Substances Directive 67/548/EEC
 DU Downstream User
 EC European Community
 ECHA European Chemicals Agency
 EC-Number EINECS and ELINCS Number (see also EINECS and ELINCS)
 EEA European Economic Area (EU + Iceland, Liechtenstein and Norway)
 EEC European Economic Community
 EINECS European Inventory of Existing Commercial Substances
 ELINCS European List of notified Chemical Substances
 EN European Standard
 EQS Environmental Quality Standard
 EU European Union
 Euphrac European Phrase Catalogue EWC
 European Waste Catalogue (replaced by LoW –see below)
 FDS Ficha de Datos de Seguridad
 GES Generic Exposure Scenario
 GHS Globally Harmonized System
 IATA International Air Transport Association
 ICAO-TI Technical Instructions for the Safe Transport of Dangerous Goods by Air
 IMDG International Maritime Dangerous Goods
 IMO International Maritime Organization
 IMSBC International Maritime Solid Bulk Cargoes
 IT Information Technology
 IUCLID International Uniform Chemical Information Database
 IUPAC International Union for Pure Applied Chemistry
 JRC Joint Research Centre
 Kow octanol-water partition coefficient
 LC50 Lethal Concentration to 50 % of a test population Lethal Dose to 50% of a test population (Median Lethal Dose)
 LE Legal Entity
 LLV Level Limit Value
 LoW List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)
 LR Lead Registrant
 M/I Manufacturer / Importer
 MS Member States
 MSDS Material Safety Data Sheet
 NOEC No observed effect concentration
 OC Operational Conditions
 OECD Organization for Economic Co-operation and Development
 OEL Occupational Exposure Limit
 OJ Official Journal
 OR Only Representative
 OSHA European Agency for Safety and Health at work
 PBT Persistent, Bioaccumulative and Toxic substance
 PEC Predicted Effect Concentration
 PNEC(s) Predicted No Effect Concentration(s)
 PPE Personal Protection Equipment

(Q)SAR Qualitative Structure Activity Relationship
RCR Risk Characterization ratio
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP REACH Implementation Project
RMM Risk Management Measure
SADT Self-accelerating decomposition temperature
SCBA Self-Contained Breathing Apparatus
SDS Safety data sheet
SIEF Substance Information Exchange Forum
SME Small and Medium sized Enterprises
STEL Short-term exposure limit
STOT Specific Target Organ Toxicity (STOT)
RE Repeated Exposure(STOT)
SE Single Exposure Par SVHC Substances of Very High Concern
TSCA Toxic Substances Control Act
TWA Time Weighed Average
UN United Nations
vPvB Very Persistent and Very Bioaccumulative / mPmB Muy Persistente y Muy Bioacumulativo
WGK Wassergefährdungsklassen

Disclaimer

PeroxyChem believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. **NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN.** The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use are beyond the control of PeroxyChem, PeroxyChem expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

Prepared By:

PeroxyChem
© 2021 PeroxyChem. All Rights Reserved.

End of Safety Data Sheet
