

SAFETY DATA SHEET

according to 1907/2006/EC, Article 3

Version no. : 2.0
Prepared on : 20.05.2026
Revised on : -

SECTION 1: Identification of the substance/mixture and of the company/undertaking.

1.1 Product identifiers

Product name Nessler reagent
Product Number PSR38889
Brand PureSynth research chemicals
CAS No. 7783-33-7

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

Identified uses : Laboratories Chemicals

1.3 Details of the supplier of the safety data sheet

Company PureSynth Research Chemicals GmbH.
64683 Einhausen Marie-Curie-Straße. 3, Germany

1.4 Emergency telephone number

Worldwide Helpline No.: 1800-8908-260

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 2), H300

Acute toxicity, Inhalation (Category 2), H330

Acute toxicity, Dermal (Category 1), H310

Specific target organ toxicity - repeated exposure (Category 2), Kidney, Central nervous system, H373

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word Danger

Hazard statement(s)

H290 May be corrosive to metals.

H301 Toxic if swallowed.

H314 Causes severe skin burns and eye damage.

H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs (Thyroid) through prolonged or repeated exposure if swallowed.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P202	Do not handle until all safety precautions have been read and understood.
P273	Avoid release to the environment
P280	Wear protective gloves/ protective clothing
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340+P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplemental Hazard Statements	none

2.3 **Other hazards:** This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher

SECTION 3: Composition / information on ingredients

3.1 Substances

Common names & Synonyms	Mol. formula	CAS number
-	-	7783-33-7
Component	Classification	Concentration
caustic potash	Met. Corr. 1; Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; H290, H302, H314, H318 Concentration limits: ≥ 5 %: Skin Corr. 1A, H314; $2 - < 5$ %: Skin Corr. 1B, H314; $0,5 - < 2$ %: Skin Irrit. 2, H315; $0,5 - < 2$ %: Eye Irrit. 2, H319; $\geq 0,5$ %: Met. Corr. 1, H290;	$\geq 10 - < 20$ %
potassium iodide	STOT RE 1; H372	$\geq 1 - < 10$ %
Mercury dichloride	Acute Tox. 2; Skin Corr. 1B; Muta. 2; Repr. 2; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H300, H314, H341, H361f, H372, H400, H410 M-Factor - Aquatic Acute: 100 - Aquatic Chronic: 10	$\geq 1 - < 2,5$ %

SECTION 4: First aid measures

Description of first aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Special hazards arising from the substance or mixture

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Hydrogen chloride gas

Hydrogen iodide

Potassium oxides

Mercury/mercury oxides.

Not combustible.

Fire may cause evolution of:

mercury vapors, hydrogen iodide

Advice for fire-fighters

Ambient fire may liberate hazardous vapors.

Stay in danger area only with self-contained breathing apparatus.

Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, and consult an expert. For personal protection see section 8.
Environmental precautions	Do not let product enter drains.
Methods and materials for containment and cleaning up	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area
Reference to other sections	For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. Hygiene measures: Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.
Conditions for safe storage, including any incompatibilities	No metal containers. Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons. Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls / Personal protection

Control parameters	
Exposure controls	
Appropriate engineering controls	
Personal protective equipment:	
Eye / face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles
Skin protection	required
Body Protection	Protective clothing.
Respiratory protection	required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

Appearance	Form: Liquid Colour: No data available
Odour	No data available
pH - Value	No data available
Density	ca.1.097 g/cm ³ at 20 °C
Boiling Point	No data available
Melting Point	No data available
Solubility in water	at 20 °C soluble
Flash point	No data available
Vapour pressure	No data available
Auto -ignition temperature	No data available
Vapour density	No data available
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	No data available
Viscosity	No data available
Explosive properties	No data available
Upper / lower flammability or explosive limits	No data available
Oxidizing properties	No data available

Other safety information: No data available

SECTION 10: Stability and reactivity

Reactivity	No data available
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature).
Possibility of hazardous reactions	Violent reactions possible with: The generally known reaction partners of water.
Condition to avoid	No data available
Incompatible materials	No data available
Hazardous decomposition products	In the event of fire: see section 5

SECTION 11: Toxicological information

Acute toxicity	Acute toxicity estimate Oral - 204,07 mg/kg (Calculation method) Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.
-----------------------	---

Skin corrosion/irritation	Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract Dermal: No data available
Serious eye damage/eye irritation	Remarks: Mixture causes severe burns.
Respiratory or skin sensitization	Remarks: Mixture causes serious eye damage. Risk of blindness!
Germ cell mutagenicity	No data available
Carcinogenicity	Evidence of genetic defects.
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	Mixture may cause damage to organs through prolonged or repeated exposure. Mixture may cause damage to organs through prolonged or repeated exposure. - Thyroid
Aspiration hazard	No data available
Additional Information	No data available
Endocrine disrupting properties	
Product	Assesment - The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea Other dangerous properties can not be excluded. This substance should be handled with particular care. Handle in accordance with good industrial hygiene and safety practice.
Components	
caustic potash	
Acute toxicity	LD50 Oral - Rat - male - 333 mg/kg (OECD Test Guideline 425) Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Acute toxicity estimate Oral - 333 mg/kg (Calculation method) Symptoms: burns of mucous membranes, Cough, Shortness of breath, Possible damages:, damage of respiratory tract Dermal: No data available Skin - Rabbit Result: Causes burns. Remarks: (IUCLID)
Skin corrosion/irritation	
Serious eye damage/eye irritation	Eyes - Rabbit Result: Causes serious eye damage. (OECD Test Guideline 405) Remarks: Causes serious eye damage.
Respiratory or skin sensitization	Sensitisation test: - Guinea pig Result: negative Remarks: (IUCLID)
Germ cell mutagenicity	Test Type: Ames test Test system: S. typhimurium Result: negative Remarks: (ECHA) Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Result: negative
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	Acute oral toxicity - If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Acute inhalation toxicity - burns of mucous membranes, Cough, Shortness of breath, Possible damages:, damage of respiratory tract
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available

potassium iodide	
Acute toxicity	Oral: No data available Inhalation: No data available LD50 Dermal - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 402) Skin - Rabbit Result: No skin irritation - 4 h (OECD Test Guideline 404)
Skin corrosion/irritation	
Serious eye damage/eye irritation	Remarks: No data available
Respiratory or skin sensitization	Patch test: - In vitro study Result: negative Remarks: (ECHA) Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.
Germ cell mutagenicity	No data available Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Result: negative
Carcinogenicity	No data available
Reproductive toxicity	Exposure to excessive amounts of iodine during pregnancy is capable of producing fetal hypothyroidism. Iodine-containing drugs have been associated with fetal goiter.
Specific target organ toxicity - single exposure	No data available Acute oral toxicity - If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Acute inhalation toxicity - burns of mucous membranes, Cough, Shortness of breath, Possible damages:, damage of respiratory tract
Specific target organ toxicity - repeated exposure	Ingestion - Causes damage to organs through prolonged or repeated exposure. - Thyroid
Aspiration hazard	No data available
Mercury dichloride	
Acute toxicity	LD50 Oral - 5,1 mg/kg Inhalation: No data available Dermal: No data available
Skin corrosion/irritation	Skin - Rabbit Result: Severe skin irritation - 24 h
Serious eye damage/eye irritation	Eyes - Rabbit Result: Severe eye irritation - 24 h
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	In vitro tests showed mutagenic effects which were not observed with in vivo test.
Carcinogenicity	This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. Suspected human reproductive toxicant Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	No data available

SECTION 12: Ecological information

Toxicity	
Mixture	No data available
Persistence and degradability	No data available
Biodegradability	No data available
Bio accumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Endocrine disrupting properties	Assessment : The substance/mixture does not contain components

considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher
Discharge into the environment must be avoided.

Other adverse effects

Components

caustic potash

Toxicity to fish

static test LC50 - Gambusia affinis (Mosquito fish) - 80 mg/l - 96 h
Remarks: (ECOTOX Database)

potassium iodide

Toxicity to fish

static test LC50 - Oncorhynchus mykiss (rainbow trout) - 3.780 mg/l - 96 h (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 7,5 mg/l - 48 h (OECD Test Guideline 202)

Mercury dichloride

Toxicity to fish

mortality LOEC - Lates calcarifer – 0.113 mg/l – 96.0 h LC50 - Oncorhynchus mykiss (rainbow trout) – 0.016 mg/l – 96.0 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) – 0.002 mg/l - 48

Toxicity to algae

Growth inhibition EC50 - Ditylum brightwellii - 0,01 mg/l - 5 d

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)

mortality LOEC - Daphnia magna (Water flea) - 0,006 mg/l - 21 d
mortality NOEC - Daphnia magna (Water flea) - 0,003 mg/l - 21 d

SECTION 13: Disposal considerations

Waste treatment methods

Products

No data available

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

	UN no.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR / RID	2922	MERCURY COMPOUND, LIQUID, N.O.S. (Nessler's reagent)	8 (6.1)	II	yes
IMDG	2922	MERCURY COMPOUND, LIQUID, N.O.S. (Nessler's reagent)	8 (6.1)	II	yes
IATA	2922	Mercury compound, liquid, n.o.s. (Nessler's reagent)	8 (6.1)	II	no

SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
: Nessler's reagent

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous Substances. : ACUTE TOXIC

: ENVIRONMENTAL HAZARDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or Stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

The information in this SDS is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. The user must be determined suitability of this information for his application.