SAFETY DATA SHEET

according to 1907/2006/EC, Article 3

Revision date: 30/03/2019

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

1.1 Product identifiers

Product name	Dimethyl sulfoxide
Product Number	PSI309
Brand	PureSynth research chemicals
CAS No.	67-68-5

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

Identified uses : Analytical Standard

1.3 Details of the supplier of the safety data sheet

Company **PureSynth Research Chemicals Pvt. Ltd.**

A-27, A.P.I.E, Hyderabad, Telangana-500037

1.4 Emergency telephone number

Worldwide Helpline No.: 1800-120-1234-34

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.2 Label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

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

SECTION 3: Composition / information on ingredients

3.1 Substances

Common names & Synonyms	Mol. formula	CAS number
DMSO Methyl sulfoxide	C_2H_6OS	67-68-5

No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

Description of first aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	After inhalation: fresh air.
In case of skin contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.
In case of eye contact	After eye contact: rinse out with plenty of water. Remove contact lenses.
If swallowed	After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.
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: Fire fighting measures

Extinguishing media	
Suitable extinguishing media	Water Foam Carbon dioxide (CO2) Dry powder.
Special hazards arising from the substance or mixture	For this substance/mixture no limitations of extinguishing agents are given. Carbon oxides Sulphur oxides. Combustible. Vapours are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Sigma- D2650 Page 3 of 12
Advice for fire-fighters	The life science business of Merck operates as Millipore Sigma in the US and Canada Development of hazardous combustion gases or vapours possible in the event of fire. In the event of fire, wear self-contained breathing apparatus.
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 or aerosols. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Environmental precautions	Do not let product enter drains. Risk of explosion.
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	**Advice on protection against fire and explosion** Keep away from open flames, hot surfaces, and sources of ignition. Take precautionary measures against static discharge. **Hygiene measures** Change contaminated clothing. Wash hands after working with substance. For precautions see section 2.2.
Conditions for safe storage, including any incompatibilities	**Storage conditions** Tightly closed. Store under inert gas. Hygroscopic. **Storage class** Storage class (TRGS 510): 10: Combustible liquids.
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	Components with workplace control parameters
Exposure controls	
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment:	
Eye / face protection	Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.
Skin protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.
Body Protection	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection	Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds 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. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties.

Appearance	Form: Liquid Colour: clear
Odour	odourless
pH - Value	Not applicable
Density	1.1 g/mL
Boiling Point	189 °C
Melting Point	16 - 19 °C
Solubility in water	completely miscible
Flash point	87 °C
Vapour pressure	0.55 hap at 20 °C
Auto -ignition temperature	300 - 302 °C at 1.013 hap
Vapour density	No data available
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	log Pow: -1,35 at 20 °C - Bioaccumulation is not expected.
Viscosity	log Pow: -1,35 at 20 °C - Bioaccumulation is not expected.
Explosive properties	No data available
Upper / lower flammability or explosive limits	Upper explosion limit: 28,5 %(V) Lower explosion limit: 2,6 %(V)
Oxidizing properties	None

Other safety information:

Surface tension	43.5 mN/m at 20 °C
Dissociation constant	35.1
Relative vapor density	2.70 - (Air = 1.0)

SECTION 10: Stability and reactivity

Reactivity	Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical.
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature).
Possibility of hazardous reactions	Risk of explosion with: acetylidene organic halides perchlorates Acid chlorides nonmetallic halides iron (III) compounds nitrates fluorides chlorates hydrides perchloric acid Oxides of phosphorus Nitric acid silver compounds silicon compounds silanes acid halides Exothermic reaction with: boron compounds oxyhalogenic compounds Potassium sodium Strong oxidizing agents phosphorus halides strong reducing agents Acid chlorides Strong acids silver salt nitrogen dioxide Risk of ignition or formation of inflammable gases or vapours with: potassium permanganate
Condition to avoid	Strong heating.
Incompatible materials	No data available
Hazardous decomposition products	In the event of fire: see section 5

SECTION 11: Toxicological information

Acute toxicity	LD50 Oral - Rat - male and female - 28.300 mg/kg (OECD Test Guideline 401) LC0 Inhalation - Rat - male and female - 4 h - > 5,33 mg/l - dust/mist (OECD Test Guideline 403) LD50 Dermal - Rat - male and female - 40.000 mg/kg

	Remarks: (ECHA)
Skin corrosion/irritation	Skin - Rabbit Result: slight irritation - 4 h (OECD Test Guideline 404)
Serious eye damage/eye irritation	Eyes - Rabbit Result: slight irritation - 24 h (OECD Test Guideline 405)
Respiratory or skin sensitization	Maximization Test - Guinea pig Result: negative (OECD Test Guideline 406) Local lymph node assay (LLNA) - Mouse Result: negative (OECD Test Guideline 429)
Germ cell mutagenicity	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 479 Result: negative Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: Intraperitoneal Method: OECD Test Guideline 474 Result: negative
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available

Additional Information

Endocrine disrupting properties

Product:

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. Repeated dose toxicity - Rat - male and female - Oral – 18 Months - NOAEL (No observed adverse effect level) - 3.300 mg/kg - LOAEL (Lowest observed adverse effect level) - 9.900 mg/kg Repeated dose toxicity - Monkey - male and female - Dermal - 18 Months - NOAEL (No observed adverse effect level) - >= 8.910 mg/kg - LOAEL (Lowest observed adverse effect level) - 990 mg/kg RTECS: PV6210000 Exposure to large amounts can cause:, redness of skin, Itching, burning, sedation, Headache, Nausea, Dizziness To the best of our knowledge, the chemical,

physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

Toxicity

Toxicity to fish	static test LC50 - Danio rerio (zebra fish) - > 25.000 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 24.600 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) Sigma- D2650 Page 9 of 12 The life science business of Merck operates as MilliporeSigma in the US and Canada 17.000 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	EC50 - activated sludge - 10 - 100 mg/l - 30 min (ISO 8192)

Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d Result: 31 % - Not readily biodegradable. (OECD Test Guideline 301D)
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, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at Levels of 0.1% or higher.
Endocrine disrupting properties **Product:** 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.
Other adverse effects Stability in water	- 0,12 - 1,2 h at 30 °C pH 7 Remarks: Hydrolyzes readily.

SECTION 13: Disposal considerations

Waste treatment methods Products	Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleansed containers like the product itself.
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	-	: Not dangerous goods			No
IMDG	-	: Not dangerous goods			No
IATA	-	: Not dangerous goods			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.

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.