

Material Safety Data Sheet

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Version 1.1

According to 91/155/EEC

1 Product and Company Information

Product Name	Stabil-P.A.C
Manufacturer	Expedeon Ltd, Unit 1A, Button End, Harston, Cambridgeshire. CB22 7GX
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2 Composition/Information on ingredients

Kit Composition

Component	CAS No	%	EC Number	Symbol	R-Phrases
NV10 Strong Release Agent DMSO	67-68-5		200-664-3		

3 Hazards identification

Special indication of hazards to humans and the environment.

Causes burns

4 First Aid Measures

After inhalation	In case of inhalation, supply fresh air. If breathing becomes difficult give oxygen and consult a physician.
After skin contact	In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes.
After eye contact	Rinse opened eye for at least 15 minutes with copious amounts of water. Assure adequate flushing by separating eyelids with fingers. Call a physician
After ingestion	If swallowed, wash out mouth with water provided person is conscious. Call physician. Do not induce vomiting

5 Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions (DMSO).

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 Accidental Release Measures

Procedures for personal precaution	Wear protective equipment. Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation.
Measures for environmental protection	No specific measures for NV10 and strong release agent Avoid contaminating sewers and waterways with DMSO
Methods for cleaning up	Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

7 Handling and Storage

Handling	Directions for Safe Handling: Avoid inhalation of vapour. Do not inhale DMSO vapour. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Avoid contact with DMSO solutions containing toxic materials. Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body. Avoid prolonged or repeated exposure.
Storage	Store at 2-8 °C. Keep closed. Keep DMSO away from heat and open flame. DMSO is hygroscopic

8 Exposure Controls / Personal protection

Additional information about design of technical facilities	Safety shower and eye bath. Mechanical exhaust required.		
General hygiene measures	Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.		
DSMO EXPOSURE LIMITS	Source	Type	Value
GERMANY	TRGS 900	OEL	160 mg/m ³
	Remarks: H,CH		
SWEDEN		LLV	(Level) 150 mg/m ³ 50 ppm
	Remarks: H		
SWITZERLAND	OEL	OEL	160 mg/m ³ 50 ppm

Remarks: H

Personal protective equipment	The usual precautionary measure are to be adhered to when handling chemicals
Protection of the hands	Protective gloves
Material of gloves	The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer
Eye protection	Wear safety glasses
Other	Wear protective clothing e.g. laboratory coat

9 Physical and Chemical Properties

General information:	NV10	Strong Release Agent	DMSO
Form	Solid	liquid	liquid
Colour	Off -white	colourless	colourless
Odour	odourless	odourless	smells
Change in condition:			
Melting point/range	Not determined	Not determined	18.4°C
Boiling point/range	Not determined	Not determined	189°C
Autoignition temperature	No data available	No data available	301°C
Explosion limits	No data available	No data available	N/A
Explosive properties	Dust may form explosive mixture in air	N/A	N/A
Flammability	No data available	No data available	189°C
Flash point	No data available	No data available	87°C
Oxidizing properties	No data available	No data available	N/A
Partitioning Coefficient	No data available	No data available	Log Kow: - 2.030
pH-value at 22 C	No data available	No data available	N/A
SG / Density	Not determined	Not determined	1.1 g/cm ³
Solubility in/miscibility with water	soluble	miscible	miscible
Vapour density	No data available	No data available	2.7 g/l
Vapour pressure	No data available	No data available	189°C
Viscosity	No data available	No data available	0.002 Pas

10 Stability and Reactivity

NV10

No data available

Strong Release agent

No data available

DMSO

Stability

stable

Conditions to Avoid

Moisture

Reactivity

Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents.

Hazardous Polymerisation

Will not occur

Hazardous Exothermic

Hazardous Exothermic Reactions: Methyl sulfoxide (DMSO)

Reactions	undergoes a violent exothermic reaction on mixing with copper wool and trichloroacetic acid. On mixing with potassium permanganate it will flash instantaneously. It reacts violently with: acid halides, cyanuric chloride, silicon tetrachloride, phosphorus trichloride and trioxide, thionyl chloride, magnesium perchlorate, silver fluoride, methyl bromide, iodine pentafluoride, nitrogen periodate, diborane, sodium hydride, and perchloric and periodic acids. When heated above its boiling point methyl sulfoxide degrades giving off formaldehyde, methyl mercaptan, and sulfur dioxide.
Hazardous Decomposition	Carbon monoxide, Carbon dioxide, Sulfur oxides.

11 Toxicological information

NV10

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Acute toxicity

OECD 423	LD50 > 2 g/kg
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Primary irritant effect

On the skin	Not irritant
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On the eye	Not irritant
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Sensitization

No effect

Additional toxicological information

Not toxic and not mutagenic (Ames test)

Strong Release Agent

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

DMSO (RTECS NUMBER: PV6210000)

Acute toxicity

OECD 423	ACUTE TOXICITY
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LC50 Inhalation Rat

40,250 ppm

4 HR

LD50 Oral Rat

3,300 mg/kg

LD50 Skin Rabbit

> 5,000 mg/kg

LD50 Oral Rat

14500 mg/kg

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Conjunctive irritation. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Hemorrhage.

LD50 Skin Rat

40000 mg/kg

LD50 Intraperitoneal Rat

8200 MG/KG

LD50 Subcutaneous Rat

12 GM/KG

Remarks: Lungs, Thorax, or Respiration:Dyspnea.
Behavioral:Change in motor activity (specific assay).

LD50 Intravenous Rat

5360 MG/KG

Remarks: Lungs, Thorax, or Respiration:Dyspnea.
Behavioral:Muscle weakness. Behavioral:Tremor.

LD50 Oral Mouse

7920 mg/kg

LD50 Skin Mouse

50000 mg/kg

LD50 Intraperitoneal Mouse

2500 MG/KG

LD50 Subcutaneous Mouse

14 GM/KG

Remarks: Kidney, Ureter, Bladder:Hematuria. Lungs,
Thorax, or

Respiration:Other changes. Behavioral:Change in motor
activity

(specific assay).

LD50 Intravenous Mouse

3100 MG/KG

Remarks: Sense Organs and Special Senses (Nose, Eye,
Ear, and

Taste):Eye:Hemorrhage. Sense Organs and Special
Senses (Nose, Eye, Ear, and Taste):Eye:Conjunctive
irritation.

LD50 Oral Dog

> 10000 mg/kg

LD50 Intravenous Dog

2500 MG/KG

Remarks: Kidney, Ureter, Bladder:Other changes.
Cardiac:Other

changes. Kidney, Ureter, Bladder:Hematuria.

LD50 Oral Chicken

12000 mg/kg

LD50 Oral Mammal

21400 mg/kg

LD50 Oral Bird (wild)

100 mg/kg

Irritation

Skin Rabbit 4 HOURS

Remarks: No irritation effect

Eyes Rabbit Remarks: Mild irritation effect

Skin Rabbit 24H

10 mg

Remarks: Open irritation test

Skin Rabbit

500 mg 24H

Remarks: Mild irritation effect

Eyes Rabbit
100 mg
Eyes Rabbit
500 mg 24H
Remarks: Mild irritation effect

Additional toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Readily absorbed through skin.
Eye Contact: May cause eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

TARGET ORGAN INFORMATION

Skin. Eyes.

CONDITIONS AGGRAVATED BY EXPOSURE

Avoid contact with DMSO solutions containing toxic materials or materials with unknown toxicological properties. Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body.

CHRONIC EXPOSURE - CARCINOGEN

Rat
Route of Application: Oral
Exposure Time: 81W
Result: Skin and Appendages: Other: Tumors.
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.
Rat
Route of Application: Subcutaneous
Exposure Time: 82W
Result: Skin and Appendages: Other: Tumors.
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.
Mouse
Route of Application: Oral
Exposure Time: 66W
Result: Blood:Leukemia Skin and Appendages: Other: Tumors.
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.
Mouse
Route of Application: Subcutaneous
Exposure Time: 66W
Result: Lungs, Thorax, or Respiration:Tumors. Skin and Appendages: Other: Tumors. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

CHRONIC EXPOSURE - MUTAGEN

Human
140 MMOL/L
Cell Type: lymphocyte
Other mutation test systems
Rat
25 GM/KG
Intraperitoneal

5D

Cytogenetic analysis

Mouse

75 MMOL/KG

Intraperitoneal

DNA damage

Mouse

93 GM/L

Cell Type: lymphocyte

Cytogenetic analysis

Mouse

1 MOL/L

Cell Type: lymphocyte

Mutation in mammalian somatic cells.

Hamster

19 PPH

Cell Type: ovary

Cytogenetic analysis

Hamster

1 PPH

Cell Type: lung

Cytogenetic analysis

CHRONIC EXPOSURE - TERATOGEN

Species: Mouse

Dose: 210 GM/KG

Route of Application: Intraperitoneal

Exposure Time: (6-12D PREG)

Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse

Dose: 5500 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (10D PREG)

Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Species: Hamster

Dose: 11 GM/KG

Route of Application: Oral

Exposure Time: (7D PREG)

Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Musculoskeletal system.

Species: Hamster

Dose: 5500 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (8D PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Hamster

Dose: 4400 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (8D PREG)

Result: Specific Developmental Abnormalities: Central nervous system. Effects on Embryo or Fetus: Fetal death.

Species: Hamster

Dose: 2500 MG/KG

Route of Application: Intravenous

Exposure Time: (8D PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Central nervous system.

Species: Hamster

Dose: 2500 MG/KG

Route of Application: Intravenous

Exposure Time: (8D PREG)

Result: Specific Developmental Abnormalities: Other developmental abnormalities.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat

Dose: 56 GM/KG

Route of Application: Intraperitoneal

Exposure Time: (6-12D PREG)

Result: Effects on Fertility: Abortion.

Species: Rat

Dose: 6600 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (7-15D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat

Dose: 30750 MG/KG

Route of Application: Subcutaneous

Exposure Time: (8-10D PREG)

Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Fertility:

Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse

Dose: 16 MG/KG

Route of Application: Oral

Exposure Time: (5-9D PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Mouse

Dose: 8250 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (10D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse

Dose: 240 GM/KG

Route of Application: Intravenous

Exposure Time: (1-20D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

12 Ecological information

NV10

No data available

Strong Release Agent

No data available

DMSO

Test Type: LC50 Fish

Species: *Onchorhynchus mykiss* (Rainbow trout)

Time: 96 h

Value: 35,000 mg/l

Test Type: EC50 Daphnia

Species: *Daphnia pulex*

Value: 27,500 mg/l

Test Type: EC50 Algae

Species: *Lepomis macrochirus* (Bluegill)

Time: 96 h

Value: > 400,000 mg/l

Test Type: LC50 Fish

Species: *Pimephales promelas* (Fathead minnow)

Time: 96 h

Value: 34,000 mg/l

13 Disposal considerations

Recommendation for product

Dispose in accordance with local and national official environmental regulations

14 Transport information

Land transport

RID/ADR class

Non-hazardous for road transport.

Maritime transport

IMDG class

Non-hazardous for sea transport.

Air transport

ICAO/IATA class

Non-hazardous for air transport.

15 Regulatory information

NV10 – Strong Release Agent

Classification and labelling according to EU directives:

This product does not need to be labelled in accordance with EC directives or respective national laws.

DMSO

Not hazardous according to Directive 67/548/EEC.

16 Other information

Warranty

The above information 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. It does not represent any guarantee of the properties of the product. Expedeon Ltd shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or delivery note for additional terms and conditions of sale.

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