



SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Version 8.0

Immersol(TM) 518 F

Material: 000000-0360-890

Revision date: 15.03.2023

Date of last issue: 20.02.2023

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

1.1 Product identifier

Product name : Immersol™ 518 F

Unique Formula Identifier (UFI) : 4Y00-R0DY-1007-3VF3

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

Use of the Substance/Mixture : Life Sciences, Research and Development
Industrial and professional use
Immersion oil for fluorescence-microscopy, halogen-free, low fluorescence

For application information, consult the processing instructions. Processing instructions or technical information sheet available on request.

1.3 Details of the supplier of the safety data sheet

Manufacturer/supplier : Carl Zeiss Jena GmbH

Oberkochen location

Address : Carl-Zeiss-Straße 22
D-73447 Oberkochen

Telephone : +49 7364 20-0

Technical Information : Chemical and material engineering

Telephone : +49 7364 20-4599

Telefax : +49 7364 20-4521

Product Safety : Chemical and material engineering

E-mail address : SDS@zeiss.com

1.4 Emergency telephone number

Poisoning Control Center : +49 551 19240 (24 hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2

H315: Causes skin irritation.

Long-term (chronic) aquatic hazard, Category 3

H412: Harmful to aquatic life with long lasting effects.



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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H315 Causes skin irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

P273 Avoid release to the environment.

P280 Wear protective gloves.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

2.3 Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Halogen-free immersion oil based on ester oil.

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester	195371-10-9 430-080-6 01-0000017636-64	Skin Irrit. 2; H315	35 - 40
Succinic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester	195371-13-2	Skin Irrit. 2; H315	30 - 35
Benzyl benzoate	120-51-4 204-402-9 607-085-00-9 01-2119976371-33	Acute Tox. 4; H302 Aquatic Chronic 2; H411	15 - 20

For explanation of abbreviations see section 16.



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SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Remove and wash contaminated clothing before re-use.
- If inhaled : In the case of inhalation of aerosol/mist consult a physician if necessary.
- In case of skin contact : Wash off with soap and plenty of water.
In the case of skin irritation or allergic reactions see a physician.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
If eye irritation persists, consult a specialist.
- If swallowed : Rinse mouth.
Do not give anything to drink or eat.
Do NOT induce vomiting.
Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : The most important known symptoms and effects are described in section 2 and / or section 11.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Carbon dioxide (CO₂)
Dry chemical
Foam
Sand
Water spray jet
- Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : In case of fire formation of carbonoxides and other toxic gases/vapors is possible.



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5.3 Advice for firefighters

Special protective equipment : In the event of fire, wear self-contained breathing apparatus for firefighters

Further information : Avoid extinguishing water reaching water, ground water or sewage system.
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Avoid contact with skin, eyes and clothing.
Ensure adequate ventilation.
Risk of slipping because of leaked / spilled product

6.2 Environmental precautions

Environmental precautions : Prevent discharge into sewerage system, soil or aquatic environment.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material.
Clean contaminated surface thoroughly.

6.4 Reference to other sections

Adequate disposal, For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin and eyes.
Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures : Take off all contaminated clothing immediately. When using, do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store at room temperature in the original container. Keep tightly closed.

Advice on common storage : Keep away from food and drink.
Do not mix with other immersion liquids.

7.3 Specific end use(s)



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Specific use(s) : Apart from the uses mentioned in section 1 no other specific uses are intended.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

None.

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Avoid contact with eyes.

Hand protection

Remarks : Avoid contact with skin. Use protective gloves which have been adapted to the respective purpose and are appropriately resistant to chemicals (DIN EN 374). Ask the glove supplier for the penetration time of the glove material.

Skin and body protection : closed work clothing

Respiratory protection : Not required; except in case of aerosol formation.

Protective measures : Avoid contact with skin, eyes and clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid
Colour : colourless
Odour : slight, aromatic
Boiling point/boiling range : ca. 320 °C

Flash point : 249 °C
Method: ISO 2592

pH : Not applicable

Viscosity
Viscosity, kinematic : 445 mm²/s (20 °C)
Method: DIN 51562

Solubility(ies)
Water solubility : insoluble

Vapour pressure : < 0.1 hPa (20 °C)

Density : 1.093 g/cm³ (20 °C)
Method: DIN 51757



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9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

10.4 Conditions to avoid

Conditions to avoid : Heat, open flames and other sources of ignition.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

In case of fire formation of carbonoxides and other toxic gases/vapors is possible.

Hazardous decomposition products : None known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: 10,578 mg/kg

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: Directive 96/54/EG, B.1

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402

Benzyl benzoate:



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Acute oral toxicity : LD50 (Rabbit): 1,680 mg/kg
Method: RTECS

Acute dermal toxicity : LD50 (Rabbit): 4,000 mg/kg
Method: RTECS

Skin corrosion/irritation

Product:

Remarks : Irritating to skin.

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Species : Rabbit
Exposure time : 4 h
Method : Directive 92/69/EWG, B.4
Result : Skin irritation

Benzyl benzoate:

Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Product:

Remarks : May irritate eyes.

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Species : Rabbit
Method : Directive 92/69/EWG, B.5
Result : No eye irritation

Benzyl benzoate:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation



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Respiratory or skin sensitisation

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Species : guinea-pig
Method : Richtlinie 96/54/EG, B.6
Result : Not sensitizing.

Benzyl benzoate:

Species : Mouse
Method : OECD Test Guideline 429
Result : negative

Germ cell mutagenicity

Product:

Germ cell mutagenicity- Assessment : No data available

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Germ cell mutagenicity- Assessment : Cytogenetic test (chromosome aberration), chinese hamster:
No reference to mutagenic effects. (OECD TG 473)

Ames-Test, salmonella typhimurium: No reference to mutagenic effects. (EEC B 14)

Carcinogenicity

Product:

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : No data available

STOT - single exposure

Product:

Remarks : No data available



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STOT - repeated exposure

Product:

Remarks : No data available

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Repeated dose toxicity - Assessment : NOAEL oral, rat: 500 mg/kg (Testing period: 28 d, Subsequent observation period: 48 d, OECD TG 407)

Aspiration toxicity

Product:

No data available

11.2 Information on other hazards

Further information

Product:

Remarks : The mixture itself is not examined. The data refer to the specifications of the ingredients. Health injuries are not known or expected under normal use. The product should be handled with the care usual when dealing with chemicals.

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Remarks : The product should be handled with the care usual when dealing with chemicals.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Harmful to aquatic life with long lasting effects.

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Toxicity to fish : LC50 (Cyprinus carpio): > 5.4 mg/l
Exposure time: 96 h



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Method: Directive 92/69/EWG C.1

LC0 (Cyprinus carpio): ≥ 5.40 mg/l

Exposure time: 96 h

Method: Directive 92/69/EWG C.1

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 6.1 mg/l
Exposure time: 48 h

Method: Directive 92/69/EWG C.2

EC0 (Daphnia (water flea)): ≥ 6.10 mg/l

Exposure time: 48 h

Method: Directive 92/69/EWG C.2

NOEC (Daphnia (water flea)): 1.6 mg/l

Exposure time: 504 h

Analytical monitoring: yes

Remarks: chronic toxicity to daphnia

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 3.6 mg/l
Exposure time: 72 h

Method: Directive 92/69/EWG C.3

NOEC (Desmodesmus subspicatus (green algae)): ≥ 3.6 mg/l

Exposure time: 72 h

Method: Directive 92/69/EWG C.3

Toxicity to microorganisms : EC10 (activated sludge): $> 1,000$ mg/l

Exposure time: 3 h

Method: EG L133/118 (5.88)

Remarks: to respiration inhibition test applies EC50

Benzyl benzoate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 2.32 mg/l

Exposure time: 96 h

Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3.09 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.475 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (activated sludge): $> 10,000$ mg/l

Exposure time: 3 h



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Method: OECD Test Guideline 209

12.2 Persistence and degradability

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 13 %
Exposure time: 28 days
Method: Modified Sturm Test

Benzyl benzoate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 94 %
Exposure time: 28 days

12.3 Bioaccumulative potential

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Partition coefficient: n- : log Pow: 8.9 (25 °C)
octanol/water Method: Directive 92/69/EWG A.8

Benzyl benzoate:

Partition coefficient: n- : log Pow: 3.97 (25 °C)
octanol/water

12.4 Mobility in soil

Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Mobility : Remarks: KOC: 50.000 (water, soil), (Method: OECD TG 121)

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Product:

Additional ecological infor- : Ecological injuries are not known or expected under normal
mation use.
Do not discharge into sewerage system, surface water or soil.



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Components:

Adipic acid-di(8-methyl-tricyclo (5.2.1.0.2.6.) decane) ester:

Additional ecological information : Do not discharge into sewerage system, surface water or soil.
Adequate disposal

Benzyl benzoate:

Additional ecological information : Do not discharge into sewerage system, surface water or soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : In accordance with local and national regulations.
Contaminated packaging : Dispose of as unused product.
Offer rinsed packaging material to local recycling facilities.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.2 UN proper shipping name

ADR : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADR : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA : Not regulated as a dangerous good

14.4 Packing group

ADR : Not regulated as a dangerous good
IMDG : Not regulated as a dangerous good
IATA (Cargo) : Not regulated as a dangerous good



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IATA (Passenger) : Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. Not applicable

Other regulations:

Follow Directive 94/33/EC on the protection of young people at work and its national implementations.

Follow Directive 92/85/EC on the protection of pregnant workers and workers who have recently given birth or are breastfeeding, and its national implementations.

15.2 Chemical safety assessment

Not required.

SECTION 16: Other information

Full text of H-Statements

H302 : Harmful if swallowed.
H315 : Causes skin irritation.
H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Chronic : Long-term (chronic) aquatic hazard
Skin Irrit. : Skin irritation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard



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of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : Relevant changes to the previous version are symbolized by vertical bars at the left edge.
Modifications
complete revision

Sources of key data used to compile the Safety Data Sheet : Reg. 1272/2008, Annex VI
TRGS 900
TRGS 903
International dangerous goods regulations
Supplier details

The information in this safety sheet is based on the data available at the time of compilation and is intended to describe the product with respect to the precautions to be taken in its use. This information is provided without any guarantee of the properties specified.

MT / EN