

Safety Data Sheet

According to Regulation (EC) No. 2015/830



Membrane Solvent

Version 1.0

Date of Compilation 7/4/2016

Printed on 7/18/2016

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

1.1 Product identifier

Identification of the substance : Microsart® Sample Prep, Membrane Solvent
Article number : SMB95-2004
Registration Number (REACH) : not relevant (mixture)

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

Uses advised against : none known
Identified uses : laboratory chemicals

1.3 Details of the supplier of the safety data sheet

Company : Sartorius Stedim Biotech GmbH
August-Spindler-Strasse 11
D-37079 Göttingen
Telephone : +49.551.308.0
Telefax : +49.551.308.3289
E-mail : PCR@Sartorius.com

1.4 Emergency telephone number

Emergency information service : **Poison Centre Munich: +49/(0)89 19240**

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Toxic if inhaled, Category 3	H331, Acute Tox. 3
Suspected of causing cancer, Category 2	H351, Carc. 2
Suspected of damaging the unborn child, Category 2	H361d, Repr. 2
Causes damage to the kidneys and the liver through prolonged or repeated exposure, Category 1	H372, STOT RE 1
Harmful if swallowed, Category 4	H302, Acute Tox. 4
Causes skin irritation, Category 2	H315, Skin Irrit. 2
Causes serious eye irritation, Category 2	H319, Eye Irrit. 2

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Pictograms

:



Signal word

: Danger

Hazard-determining components of labelling:

trichloromethane
3-methylbutan-1-ol

Hazard statements

: H302 Harmful if swallowed. H331 Toxic if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.

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H372 Causes damage to the kidneys and the liver through prolonged or repeated exposure.

Precautionary statements : P280 Wear protective gloves/protective clothing/eye protection/face protection.
P260 Do not breathe mist/vapours/spray.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P308+P313 IF exposed or concerned: Get medical advice/attention.

The above mentioned labelling is valid for distribution to industrial user.

2.3 Other hazards

All chemicals are potentially dangerous. They should therefore only be handled by specially trained personnel with the necessary care.

Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with non-hazardous additions.

Name of substance		H-statements	m% - range
Cas number	EC number		
Trichlormethane 67-66-3	200-663-8	Acute Tox. 3, H331 Carc. 2, H351 Repr. 2, H361d STOT RE 1, H372 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319	50-100
Name of substance		H-statements	m% - range
Cas number	EC number		
3-Methylbutan-1-ol 123-51-3	204-633-5	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 4, H332 STOT SE 3, H335	1-≤2.5

Additional information: For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Remove any clothing soiled by the product. First Aider: Pay attention to self-protection!

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Following inhalation:

Take affected persons into fresh air and keep quiet. Remove to fresh air. If breathing is difficult, give oxygen. Seek medical advice immediately.

Following skin contact:

Wash with water and soap. Seek medical treatment in case of complaints.

Following eye contact:

Rinse opened eye for 10 minutes under running water. Then consult a doctor.

Following ingestion

Rinse out mouth and drink a glass of water. Do not induce vomiting. In case of spontaneous vomiting: Risk of aspiration. Pulmonary failure possible. Call for a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Irritations, coughing, headache, dizziness, agitation, cramp, nausea, vomiting, breathing difficulty, unconsciousness

Hazards

Risk of aspiration. Danger of impaired breathing.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use fire extinguishing methods suitable to surrounding conditions.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Ambient fire may liberate hazardous vapours.

Hazardous combustion products

Hydrogen chloride (HCl), phosgene gas, carbon monoxide and carbon dioxide

5.3 Advice for firefighters

Protective equipment:

Wear self-contained respiratory protective device. Wear fully protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Wear personal protective equipment. Ensure adequate ventilation. Do not inhale vapours. Avoid contact with the eyes and skin. Evacuate the danger area, observe emergency procedures, and consult an expert.

6.2 Environmental precautions

Do not allow product to reach sewage system or any water course.

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6.3 Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.

6.4 Reference to other sections

Hazardous combustion products	: see section 5.
Personal protective equipment	: see section 8.
Incompatible materials	: see section 10.
Disposal considerations	: see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Work only in fume cupboard. Keep receptacles tightly sealed. Prevent formation of aerosols.

Information about fire - and explosion protection:

The product is not flammable.
Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities**Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.

Information about storage in one common storage facility:

Store away from foodstuffs.

Further information about storage conditions:

Store receptacle in a well ventilated area. Protect from exposure to the light.

Recommended storage temperature:

15 - 25 °C

7.3 Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters**

Ingredients with limit values that require monitoring at the workplace:	
67-66-3 trichloromethane	
WEL (Great Britain)	Long-term value: 9.9 mg/m ³ , 2 ppm Sk
IOELV (EU)	Long-term value: 10 mg/m ³ , 2 ppm Skin
123-51-3 3-methylbutan-1-ol	
WEL (Great Britain)	Short-term value: 458 mg/m ³ , 125 ppm Long-term value: 366 mg/m ³ , 100 ppm

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DNELs

Worker

Long-term exposure - systemic effects:		
67-66-3 trichloromethane		
Dermal	DNEL	0.94 mg/kg (worker)
Inhalative	DNEL	2.5 mg/m ³ (worker)
123-51-3 3-methylbutan-1-ol		
Inhalative	DNEL	73 mg/m ³ (worker)
Long-term exposure - local effects:		
67-66-3 trichloromethane		
Inhalative	DNEL	2.5 mg/m ³ (worker)
123-51-3 3-methylbutan-1-ol		
Inhalative	DNEL	73 mg/m ³ (worker)
Short-term exposure - systemic effects:		
67-66-3 trichloromethane		
Inhalative	DNEL	333 mg/m ³ (worker)
123-51-3 3-methylbutan-1-ol		
Inhalative	DNEL	292 mg/m ³ (worker)
Short-term exposure - local effects:		
123-51-3 3-methylbutan-1-ol		
Inhalative	DNEL	292 mg/m ³ (worker)

Consumers

Long-term exposure - systemic effects:		
67-66-3 trichloromethane		
Inhalative	DNEL	0.18 mg/m ³ (Customer)
123-51-3 3-methylbutan-1-ol		
Oral	DNEL	25 mg/kg (Customer)
Inhalative	DNEL	15.4 mg/m ³ (Customer)
Long-term exposure - local effects:		
123-51-3 3-methylbutan-1-ol		
Inhalative	DNEL	256 mg/m ³ (Customer)

PNECs

PNECs
67-66-3 trichloromethane

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PNEC	0.56 mg/kg (Soil) 0.048 mg/l (Sewage treatment plant) 0.015 mg/l (Marine water) 0.09 mg/kg (Mws) 0.45 mg/kg (Fresh Water sediment) 0.146 mg/l (Fresh Water) 0.133 mg/l (intermittent releases)
123-51-3 3-methylbutan-1-ol	
PNEC	0.061 mg/kg (Soil) 0.0255 mg/l (Marine water) 0.105 mg/kg (Mws) 1.05 mg/kg (Fresh Water sediment) 0.255 mg/l (Fresh Water) 37 mg/l (intermittent releases)

Additional information:

The lists valid during the making were used as basis.

8.2 Exposure controls

Individual protection measures (personal protective equipment)

General protective and hygienic Measures : Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Avoid contact with the eyes and skin. Wash hands before breaks and at the end of work. Do not inhale gases / fumes / aerosols.

Individual protection measures : Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier

Respiratory protection : Required when vapours/aerosols are generated. Filter AX (colour code: brown). When selecting your respiratory unit: Consider the "Rules for the use of respiratory protection equipment" (BGR190).

Hand protection : Check protective gloves prior to each use for their proper condition. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves
Fluorocarbon rubber (Viton)
≥ 0,7 mm

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

Value for the permeation: Level ≥ 6

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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As protection from splashes gloves made of the following materials are suitable:

Viton, thickness: 0,7 mm

Value for the permeation: Level ≥ 6

Eye/face protection : Tightly sealed goggles.

Skin- and body protection : Protective work clothing

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Fluid
Colour	: Colourless
Odour	: Characteristic
Odour threshold	: 85-202 ppm

Other physical and chemical parameters

pH (value)	: no information available
Melting / freezing point	: -63°C
Initial boiling point and boiling range	: 62°C
Flash point	: not applicable
Flammability (solid, gas)	: no information available
Ignition temperature	: 982°C
Decomposition temperature	: No information available
Danger of explosion	: Product does not present an explosion hazard.

Explosion limits

Lower explosion limit (LEL)	: No information available
Upper explosion limit (UEL)	: No information available
Oxidizing properties	: No information available

Vapour pressure at 20°C	: 210 hPa
Density at 20°C	: 1.47 g/cm ³
Relative density	: No information available
Vapour density	: No information available
Evaporation rate	: no data available

Solubility(ies)

Water solubility at 20°C	: 8 g/l
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Partition coefficient

n - Octanol / water	: ~2 log POW
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Viscosity	: No information available
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9.2 Other information

No further relevant information available.

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SECTION 10: Stability and reactivity**10.1 Reactivity**

See section 10.3

10.2 Chemical stability

No decomposition if used and stored according to specifications

10.3 Possibility of hazardous reactions

Contact with the below mentioned substances may cause violent reactions or an explosion. Alkali metals, amines, alkaline earth metals, metals in powder form, alcohol, oxygen, alkali hydroxides, strong bases, organic nitro compounds

10.4 Conditions to avoid

Strong Heating. Exposure to light.

10.5 Incompatible materials

Gum, various plastics

10.6 Hazardous decomposition products

In case of fire: see section 5.

SECTION 11: Toxicological information**11.1 Information on toxicological effects**

This mixture does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC.

Acute toxicity

LD/LC50 values relevant for classification

67-66-3 trichloromethane		
Oral	LD ₅₀	695 mg/kg (rat) (RTECS)
Inhalative	LC ₅₀ /4 h	47.7 mg/l (rat) (IUCLID)
123-51-3 3-methylbutan-1-ol		
Oral	LD ₅₀	1300 mg/kg (rat) (GESTIS)
Dermal	LD ₅₀	3210 mg/kg (rabbit) (GESTIS)

Specific symptoms in biological assay:

Skin and eye irritation test (rabbit): slight irritations.

Primary irritant effect:

On the skin : Irritant to skin and mucous membranes. Repeated exposure may cause skin dryness or cracking.

On the eye : Irritating effect.

After inhalation : Narcosis, unconsciousness. Absorption.

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Sensitisation : No sensitising effects known.

CMR effects:

Carc. 2, Repr. 2

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

: No information available.

: Suspected of causing cancer.

: Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : No aspiration toxicity classification.

Additional toxicological information:

After swallowing

: Absorption Nausea

Vomiting

Risk of aspiration Damage of lungs.

After absorption

: Headache Dizziness

Irritation

Spasms

Possibly respiratory arrest and heart attack

Damage of liver and kidneys.

Further information:

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

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Fish toxicity:	
67-66-3 trichloromethane	
LC ₅₀	18 mg/l/96 h (Lepomis macrochirus) (IUCLID)
123-51-3 3-methylbutan-1-ol	
LC ₅₀	700 mg/l/96 h (Onchorhynchus mykiss)
Daphnia toxicity:	
67-66-3 trichloromethane	
EC50	79 mg/l/48 h (Daphnia magna) (IUCLID)
123-51-3 3-methylbutan-1-ol	
EC50	260 mg/l/48 h (daphnia)
Algal toxicity:	
67-66-3 trichloromethane	

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IC5	1100 mg/l (Scenedesmus quadricauda) (IUCLID) 8d
123-51-3 3-methylbutan-1-ol	
IC50	493 mg/l/72 h (Desmodesmus subspicatus)
Bacterial toxicity:	
67-66-3 trichloromethane	
EC5	125 mg/l (Pseudomonas putida) (IUCLID) 16h

12.2 Persistency and degradability

Biodegradation: 0%/14d OECD 301

Not easily biodegradable

12.3 Bioaccumulative potential

Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected (log POW \leq 4).

12.4 Mobility in soil

No further relevant information available.

Ecotoxicological effects:

Remark : Do not allow to enter waters, waste water, or soil!

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects

No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

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14.1 UN number : 1888

14.2 UN proper shipping name : 1888 CHLOROFORM
ADR : CHLOROFORM
IMDG, IATA : CHLOROFORM

14.3 Transport hazard class(es)



Class : 6.1 (toxic substances)

14.4 Packing group : III

14.5 Environmental hazards : No
Marine pollutant

14.6 Special precautions for user : Toxic substances
Warning : 60
Danger Code (Kemler) : F-A, S-A
EMS Number : Liquid halogenated hydrocarbons
Segregation groups

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

14.8 Transport/Additional information:

ADR

Limited quantities (LQ) : 5L
Excepted quantities (EQ) : E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml
Transport category (TC) : 2
Tunnel restriction code (TRC) : E

IMDG

Limited quantities (LQ) : 5L
Excepted quantities (EQ) : E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

UN "Model Regulation" : UN1888, CHLOROFORM, 6.1, III

SECTION 15: Regulatory information

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

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National regulations:

Information about limitation of use:

Employment restrictions concerning pregnant and lactating women must be observed. Employment restrictions concerning juveniles must be observed.

Breakdown regulations:

Water hazard class:

Water hazard class 3 (Self-assessment): extremely hazardous for water.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

16.1 Abbreviations and acronyms

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

LD50*: Lethal Dose, 50 percent (Not relevant for classification)

LD50*: Lethal Concentration, 50 percent (Not relevant for classification)

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Acute Tox. 3: Acute toxicity, Hazard Category 3

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Carc. 2: Carcinogenicity, Hazard Category 2

Repr. 2: Reproductive toxicity, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

Key literature references and sources for data

Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

Regulation (EC) No. 1272/2008 (CLP, EU GHS)

16.2 List of relevant phrases (code and full text as stated in chapter 2 and 3)

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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H331 Toxic if inhaled.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H361d Suspected of damaging the unborn child.

H372 Causes damage to the kidneys and the liver through prolonged or repeated exposure.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.