Reagent (derivatization) Solution (RDS)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 02.02.2023 Version: 1.0

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

1.1. Product identifier

Forma výrobku	Směs
Název výrobku	**Reagent (derivatization) Solution (RDS)**
Typ výrobku	Roztok

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

1.2.1. Relevant identified uses

Main use category	Professional use
Use of the substance/mixture	Reagent

1.2.2. Uses advised against

Restrictions on use	Not specified

1.3. Details of the supplier of the safety data sheet

Chromservis s.r.o.
Jakobiho 327, 109 00 Prague 10 – Petrovice
T: +420 274 021 211
E-mail: info@chromservis.eu
www.chromservis.eu

1.4. Emergency telephone number

Country	Official advisory body	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Cardiff Centre) University Hospital Llandough	Penlan Road CF64 2XX Llandough	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Edinburgh Centre) Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	Only for healthcare professionals
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre	16/17 Framlington Place Newcastle-upon-Tyne NE2 4AB Newcastle	0344 892 0111	Only for healthcare professionals
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids, Category 2	H225
Skin corrosion/irritation, Category 2	H315
Specific target organ toxicity - single exposure Category 3 Central nervous system	H336

Aspiration hazard Category 1	H304
Short-term (acute) aquatic hazard (Category 1)	H400
Short-term (acute) aquatic hazard (Category 1)	H410

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Highly flammable liquid. Causes serious eye damage. It irritates the skin. Harmful by ingestion, skin contact and inhalation. It can cause damage to the respiratory system and drowsiness and dizziness.

2.2. Label elements

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

Hazard pictograms (CLP)

Signal word (CLP)	**Danger**
Obsahuje	isooctane
Hazard statements (CLP)	H225 - Highly flammable liquid and vapour. H315 - Causes skin irritation. H304 - May be fatal if swallowed and enters airways. H336 - May cause drowsiness or dizziness. H410 - Very toxic to aquatic life with long lasting effects.
Precautionary statements (CLP)	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 - Avoid breathing mist, spray, vapours. P280 - Wear protective gloves, protective clothing, eye protection, face protection. P302+P352 - IF ON SKIN: Wash with plenty of soap and water. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor P310 - Immediately call a POISON CENTER, a doctor. P501 - Dispose of contents and container to a hazardous or special waste collection point.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,2,4-trimethylpentane	CAS-No.: 540-84-1 EC-No.: 208-759-1 EC Index-No.: 601-009-00-8	≤ 75	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	If possible, show the doctor this safety data sheet. Failing this, show the doctor the packaging or label.
First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing. Consult a doctor/medical service if you feel unwell.
First-aid measures after skin contact	Wash skin with plenty of water. Take off contaminated clothing. If irritation persists, consult a doctor.
First-aid measures after eye contact	Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Consult an eye specialist.
First-aid measures after ingestion	After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects	The most important known symptoms and effects are described in the classification (see Section 2) and/or Section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Not specified.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Carbon dioxide (CO2) Foam Dry powder.
Unsuitable extinguishing media	Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard	Combustible.
Explosion hazard	Can form explosive mixtures with air.
Hazardous decomposition products in case of fire	Hydrogen cyanide. Nitrogen oxides.

5.3. Advice for firefighters

Precautionary measures fire	Do not breathe vapours.
Firefighting instructions	Cool containers / tanks with spray water if possible.
Protection during firefighting	Use a self-contained breathing apparatus and also a protective suit.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	Avoid contact with skin, eyes and clothing. See Section 8.
Emergency procedures	Do not breathe vapours. In case of inadequate ventilation wear respiratory protection. Remove all sources of ignition. Evacuate personnel to a safe area.

6.1.2. For emergency responders

Protective equipment	Concerning personal protective equipment to use, see section 8.

6.2. Environmental precautions

Do not allow product to spread into the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect all waste in suitable and labelled containers and dispose according to local legislation.

6.4. Reference to other sections

See Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	Avoid contact with skin and eyes. Avoid breathing mist, vapors, spray.
Precautions for safe handling	Keep away from sources of ignition - No smoking. Avoid the build-up of electrostatic charge.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Keep in a cool place. Store in a well-ventilated place. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific end use(s)

Not specified.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

DNEL/DMEL
Informace není k dispozici
PNEC (Water)
Informace není k dispozici

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No additional information available

8.2.2. Personal protection equipment

8.2.2.1. Eye and face protection

Eye protection:
Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Not required for normal conditions of use. Normal overalls

Hand protection:
Gloves for work in laboratory conditions.
For working with a large amount of solution:
Hand protection: adequate protective gloves according to ČSN EN 374. When choosing gloves, care must be taken to ensure that they are made of suitable materials, have sufficient thickness and do not have a lower penetration resistance than required. After finishing, the gloves must be cleaned and washed before washing. Sufficient attention should be paid to the care of the skin of the hands. The inside of the gloves should not contain powders that can cause allergies to the skin of the hands.

If used in solution or mixed with other substances and under conditions that differ from EN 374, contact the supplier of approved gloves. This recommendation is only advisory and must be evaluated by an industrial hygienist safety engineer familiar with the specific situation of the intended use in the company

8.2.2.3. Respiratory protection

Respiratory protection:
No respiratory protection needed under normal use conditions

8.2.2.4. Thermal hazards

Thermal hazard protection:
Undefined.

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	colorless
Odour	Not available
Odour threshold	Not available
Melting point	-107 °C
Freezing point	Not available
Boiling point	98 - 99 °C
Flammability	Not available
Explosion limits	Not available
Lower explosion limit	1 %(V)
Upper explosion limit	6 %(V)
Flash point	-12 °C - closed cup
Auto-ignition temperature	Not available
Decomposition temperature	Not available
pH	Not available
Viscosity, kinematic	Not available
Solubility	insoluble
Partition coefficient n-octanol/water (Log Kow)	log Pow: 4,6
Vapour pressure	55 hPa at 21 °C 120 hPa at 37,80 °C
Vapour pressure at 50°C	Not available
Density	0,692 g/mL at 25 °C
Relative density	Not available
Relative vapour density at 20°C	Not available
Particle characteristics	Not applicable
Relative vapor density	3,94 - (Air = 1.0)

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapours may form explosive mixture with air.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Violent reactions possible with:
Strong oxidizing agents.

10.4. Conditions to avoid

Warming.

10.5. Incompatible materials

Various plastics.

10.6. Hazardous decomposition products

In the event of fire: see section 5.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	Based on available data, the classification criteria are not met
Acute toxicity (dermal)	Based on available data, the classification criteria are not met
Acute toxicity (inhalation)	Based on available data, the classification criteria are not met

Isooctane (540-84-1)	
LD50 oral rat	> 5.000 mg/kg (OECD Test Guideline 401)
LD50 dermal rabbit	> 2.000 mg/kg (OECD Test Guideline 402)
LC50 Inhalation - Rat (Vapours)	> 33,52 mg/l/4h (ECHA) male and female (OECD Test Guideline 403) Symptoms: mucosal irritations

Skin corrosion/irritation	Causes skin irritation. Skin - Rabbit Result: Irritating to skin. - 24 h (OECD Test Guideline 404) Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product
Serious eye damage/irritation	Eyes - Rabbit Result: No eye irritation (OECD Test Guideline 405).
Respiratory or skin sensitisation	Maximization Test - Guinea pig Result: negative (OECD Test Guideline 406)

Germ cell mutagenicity	Test Type: Ames test Test system: TA98 Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: human lymphoblastoid cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative Test Type: unscheduled DNA synthesis assay Species: Rat Cell type: Liver cells Application Route: Oral Method: OECD Test Guideline 486 Result: negative
Carcinogenicity	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	May cause drowsiness or dizziness. Central nervous system.
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis

Isobutanol (78-83-1)	
Viscosity, kinematic	No data available

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties	The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

11.2.2. Other information

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short–term (acute)	Not classified
Hazardous to the aquatic environment, long–term (chronic)	Not classified

LC50 - Fish [1]	semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0,11 mg/l - 96 h (OECD Test Guideline 203)
EC50 - Crustacea [1]	static test EC50 - Daphnia magna (Water flea) - 0,4 mg/l - 48 h
EC50 72h - Algae [1]	EC0 - Pseudomonas putida - 10.000 mg/l Remarks: (IUCLID)

12.2. Persistence and degradability

Biodegradability aerobic - Exposure time 28 d
Result: 51,3 % - Inherently biodegradable

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

This substance/mixture does not meet the PBT criteria of REACH, Annex XIII.

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties	The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
Product/Packaging disposal recommendations	Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

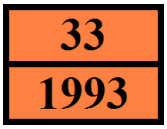
SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1993	UN 1993	UN 1993	UN 1993	UN 1993
14.2. UN proper shipping name				
FLAMMABLE LIQUID, N.O.S.	FLAMMABLE LIQUID, N.O.S.	Flammable liquid, n.o.s.	FLAMMABLE LIQUID, N.O.S.	FLAMMABLE LIQUID, N.O.S.
Transport document description (ADR)				
UN 1993 FLAMMABLE LIQUID, N.O.S.(isooctan), 3, I, (D/E)	UN 1993 FLAMMABLE LIQUID, N.O.S. (isooctan), 3, I	UN 1993 Flammable liquid, n.o.s. (isooctan), 3, I	UN 1993 FLAMMABLE LIQUID, N.O.S. (isooctan), 3, I	UN 1993 FLAMMABLE LIQUID, N.O.S. (isooctan), 3, I
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
I	I	I	I	I
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No

ADR	IMDG	IATA	ADN	RID
No supplementary information available				

14.6. Special precautions for user

Overland transport	
Classification code (ADR)	F1
Special provisions (ADR)	274
Limited quantities (ADR)	0
Excepted quantities (ADR)	E3
Packing instructions (ADR)	P001
Mixed packing provisions (ADR)	MP19
Portable tank and bulk container instructions (ADR)	MP7, MP17
Portable tank and bulk container special provisions (ADR)	TP1, TP27
Tank code (ADR)	L4BN
Vehicle for tank carriage	FL
Transport category (ADR)	1
Special provisions for carriage - Operation (ADR)	S2, S20
Hazard identification number (Kemler No.)	33
Orange plates	
Tunnel restriction code (ADR)	D/E

Transport by sea	
Special provisions (IMDG)	274
Limited quantities (IMDG)	0
Excepted quantities (IMDG)	E3
Packing instructions (IMDG)	P001
IBC packing instructions (IMDG)	IBC02
Tank instructions (IMDG)	T11
Tank special provisions (IMDG)	TP1, TP27
EmS-No. (Fire)	F-E
EmS-No. (Spillage)	S-E
Stowage category (IMDG)	E

Air transport	
PCA Excepted quantities (IATA)	E3
PCA Limited quantities (IATA)	Forbidden
PCA limited quantity max net quantity (IATA)	Forbidden
PCA packing instructions (IATA)	351
PCA max net quantity (IATA)	1L
CAO packing instructions (IATA)	361
CAO max net quantity (IATA)	30L
Special provisions (IATA)	A3
ERG code (IATA)	3H

Inland waterway transport	
Classification code (ADN)	F1
Special provisions (ADN)	274
Limited quantities (ADN)	0
Excepted quantities (ADN)	E3
Carriage permitted (ADN)	T
Equipment required (ADN)	PP, EX, A
Ventilation (ADN)	VE01
Number of blue cones/lights (ADN)	1

Rail transport	
Classification code (RID)	F1
Special provisions (RID)	274
Limited quantities (RID)	0
Excepted quantities (RID)	E3
Packing instructions (RID)	P001
Mixed packing provisions (RID)	MP7, MP17
Portable tank and bulk container instructions (RID)	T11
Portable tank and bulk container special provisions (RID)	TP1, TP27
Tank codes for RID tanks (RID)	L4BN
Transport category (RID)	1
Hazard identification number (RID)	33

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes			
Section	**Changed item**	**Change**	**Comments**
1-16	New processing of the sheet		According to Regulation 2020/878

Abbreviations and acronyms:	
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
BCF	Bioconcentration factor
ATE	Acute Toxicity Estimate
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CAS-No.	Chemical Abstract Service number
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disrupting properties
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
PBT	Persistent Bioaccumulative Toxic
N.O.S.	Not Otherwise Specified

Data sources: Information from the manufacturer. ECHA (European Chemicals Agency).

Training advice: Safety training for chemicals handling.

Full text of H- and EUH-statements:	
Flam. Liq. 2	Flammable liquids (Category 2)
Skin Irrit. 2	Skin irritation (Category 2)
STOT SE 3	Specific target organ toxicity - single exposure (Category 3)
Asp. Tox. 1	Aspiration hazard (Category 1)
Aquatic Acute 1	Short-term (acute) aquatic hazard (Category 1)
Aquatic Chronic 1	Long-term (chronic) aquatic hazard (Category 1)
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Flam. Liq. 2	H225	Calculation method
Skin Irrit. 2	H315	Calculation method
STOT SE 3	H336	Calculation method
Asp. Tox. 1	H304	Calculation method
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

Labeling according to Regulation (EC) No. 1272/2008 [CLP] - small packages up to 125 ml:

Hazard pictograms (CLP)	
Signal word (CLP)	**Danger**
Obsahuje	Isooctane
Hazard statements (CLP)	May be fatal if swallowed and enters airways.
Precautionary statements (CLP)	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.