

SAFETY DATA SHEET

in accordance with Regulation (EC) No 1907/2006 of the European Parliament as amended.

CREATON SWELLING AGENT

Creation date	30 July 2018	Version number	1.0
Revised on			

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

1.1. Product identifier	CREATON SWELLING AGENT
Substance / Mixture	Substance
Chemical name CAS number Index number	Tetrahydrofuran 109-99-9
EC (EINECS) number	603-025-00-0
Registration number Other names of the substance	203-726-8 01-2119444314-46-0000 Tetramethylene oxide

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

Specific use of the substance	Manufacture of substances, use in coatings, polymer production, use in detergents, manufacture of substances, use in laboratories, formulation and repackaging/packaging of the substance and mixtures, functional fluids.
Non-recommended use of the substance	The product must not be used in any way other than that specified in paragraph 1.
Chemical Safety Report	

1.3. Details of the supplier providing the safety data sheet Supplier

Name or trade name	Creaton AG
Address	Dillinger Straße 60 , 86637 Wertingen Germany
Phone	0049 (0)0827286 0

E-mail address of a competent person responsible for the safety data sheet

Name	Jindřich Vrbenský
E-mail	J.Vrbensky@email.cz

1.4. Emergency number

Poison Information Centre Erfurt, Nordhäuser Straße 74, 99089 Erfurt, Germany, Phone: +49 361 730 730.
Poison Information Centre, Mathildenstr. 1, 79106 Freiburg, emergency phone +49 761 19 240. Poison Information Centre of the Federal States of Rhineland-Palatinate and Hesse, Langenbeckstraße 1, Building 601, 55131 Mainz, phone: +49 613 119 240.
Poison Information Centre Munich, Ismaninger Str. 22, 81675 Munich, phone: +49 89 19 240. Poison Information Centre Berlin, Charité-Universitätsmedizin, Campus Benjamin Franklin, Hindenburgdamm 30, 12203 Berlin, phone: +49 30 19240.
Poison Information Centre-North, Tel: +49 551 19 240.
Poison Information Centre, Bonn Poison Control Centre, tel.

SECTION 2: Potential hazards

2.1. Classification of the substance or mixture

Classification of the substance according to Regulation (EC) No 1272/2008

The substance is classified as hazardous.

Flam. Liq. 2, H225
Acute Tox. 4,
H302 Eye Irrit. 2,
H319 STOT SE 3,
H335 Carc. 2,
H351

The full text of all classifications and H-phrases is given in chapter 16.

The most important harmful physico-chemical effects

Highly flammable liquid and vapour.

Most important adverse effects on human health and the environment Causes severe eye irritation.

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May cause respiratory irritation. Suspected of causing cancer. Harmful if swallowed.

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2.2. Labelling elements

Hazard pictogram



Signal word

Danger

Hazardous substance

Tetrahydrofuran (Index: 603-025-00-0; CAS: 109-99-9)

Hazard warnings

H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed. Causes severe eye irritation.
H319
H335 May irritate the respiratory tract.
H351 May probably cause cancer.

Safety instructions

P202 Read and understand all safety instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not smoke.
P233 Keep container tightly closed. Wear protective gloves/protective clothing/eye protection/face protection.
P280
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if possible. Continue rinsing.
P310 Immediately call POISON CENTRE/ or doctor.
P370+P378 In case of fire: Use powder fire extinguisher/carbon dioxide/water spray or alcohol-resistant foam to extinguish.
P501 Dispose of contents/container to a recognised waste disposal facility.

Further information

EUH 019 May form explosive peroxides.

2.3. Other hazards

May cause drowsiness and dizziness. This substance is neither persistent, bioaccumulative nor toxic (PBT). This substance is neither highly persistent nor highly bioaccumulative (vPvB).

SECTION 3: Composition/Information on ingredients

3.1. Substances

Chemical characteristic

The substance listed below.

Identification number n	Substance name	Content in weight percent	Classification according to Regulation (EC) No 1272/2008	Note
Index: 603-025-00-0 CAS: 109-99-9 EC: 203-726-8 Registration number : 01-2119444314-46- 0000	Main material component Tetrahydrofuran	≥99	Flam. Liq. 2, H225 Acute Tox. 4, H302 Eye Irrit. 2, H319 STOT SE 3, H335 Carc. 2, H351 Specific Concentration limit: Eye Irrit. 2, H319: C ≥ 25 % STOT SE 3, H335: C ≥ 25 %	1

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Notes

1 Substance for which exposure limit values of society exist for the working environment.

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The full text of all classifications and H-phrases is given in chapter 16.

SECTION 4: First aid measures

4.1. Description of the first aid measures

Pay attention to your own safety. If health problems occur or in case of doubt, inform the doctor and give him information from this safety data sheet. In case of unconsciousness, place the victim in a stabilised lateral position with the head slightly tilted and ensure patency of the airway, do not induce vomiting in any way. If the patient vomits, make sure that the vomit is not swallowed. In life-threatening conditions, first attempt to resuscitate the victim and secure medical help. In case of respiratory arrest - immediately initiate artificial respiration. In case of cardiac arrest - immediately perform indirect cardiac massage.

Inhalation

Remove the affected person to fresh air and immobilise in a position that facilitates breathing. Do not leave the victim unattended. Keep the affected person warm and quiet. Seek medical advice/medical assistance immediately. If breathing is difficult, administer oxygen. In case of respiratory arrest, administer artificial respiration.

In case of contact with the skin

In case of contact, rinse skin immediately with plenty of soap and water. Remove all contaminated clothing immediately. If irritation persists, seek medical attention immediately.

In case of contact with the eyes

Rinse immediately with plenty of water for at least 15 minutes. Remove any contact lenses if possible. Continue rinsing. Consult a doctor immediately, if possible an eye specialist.

In case of ingestion

Rinse mouth with water. If conscious, drink plenty of water. Do NOT induce vomiting. Do not give milk or alcoholic drinks. Never give anything by mouth to an unconscious person. Place a vomiting person lying on their back in the recovery position. Seek medical advice/medical assistance immediately.

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

Inhalation

If inhaled, signs and symptoms may include the following: Coughing, choking, wheezing, difficulty breathing, chest congestion, shortness of breath and/or fever.

In case of contact with the skin

Skin contact may cause the following symptoms: Nausea Dizziness Headache.

In case of contact with eyes

Causes severe eye irritation. **In**

case of ingestion

Irritation, malaise.

4.3. Indications for immediate medical help or special treatment

Symptomatic treatment. Treatment in case of overexposure should focus on symptom control and the clinical condition of the patient.

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SECTION 5: Fire-fighting measures

5.1. Extinguishing agent

Suitable extinguishing agents

SMALL FIRE: Use powder extinguisher, CO₂, water spray or alcohol-resistant foam. LARGE FIRES: Use water spray, water mist or alcohol-resistant foam.

Unsuitable extinguishing agents

Do not use a water jet.

5.2. Special hazards arising from the substance or mixture

Fine vapour/mist may be flammable at temperatures below normal flash point. When mixed with air or in contact with an ignition source, the vapours may burn outdoors or explode indoors. Vapours may be heavier than air. May travel along the ground for long distances before igniting and flashing back to the vapour-producing source. Fight the fire from as far away as possible or use unmanned hose holders or monitor streamers. Remove containers from the fire area if it is safe to do so. Cool containers with plenty of running water for some time after extinguishing the fire. In the event of an audible draining sound from pressure relief safety devices or in the event of discolouration of the tanks, leave the respective area immediately. Stay out of reach of burning tanks. In the case of large fires, use unmanned hose holders or monitor jet pipes. If this option is not available, leave the area and allow the fire to burn out.

5.3. Advice for firefighters

Use heavy breathing apparatus in positive pressure mode (SCBA). Special firefighter protective suits offer only limited protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Provide adequate ventilation. Remove all sources of ignition. Remove persons to safety.

Beware of accumulating vapours that can form explosive concentrations. Vapours can accumulate in low-lying areas.

6.2. Environmental protection measures

Take precautions to prevent the product from entering the sewage system. Prevent further leakage or spillage if this can be done without danger.

6.3. Methods and material for retention and cleaning

Remove all sources of ignition. All equipment used when handling this product must be earthed. Avoid contact with spilled product (do not touch or run through). Seal leak if this can be done without risk. Avoid discharge into waterways, sewers, basements and enclosed areas. A special vapour suppression foam may be used to reduce vapours. Bind or cover with dry earth, sand or other non-flammable materials and transfer to containers. Use clean tools that do not cause sparks to collect the absorbed substance.

6.4. Reference to other sections

See sections 7, 8 and 13.

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SECTION 7: Handling and storage

7.1. Protective measures for safe handling

For industrial use only. Keep container tightly closed when not in use. All sources of ignition must be extinguished. Wear recommended personal protective equipment. Containers must be properly earthed before starting transfer. Electrical equipment must always be earthed and must comply with the relevant electrical standards and legislation. Check atmosphere for explosiveness and lack of oxygen. Observe precautions for entering closed rooms. If the inhibitor is below the minimum quantity, top it up and mix well to ensure that it fulfils its purpose. Carefully release internal pressure before removing the cap. Disconnect, vent, drain, clean and blow out systems or equipment before servicing or repairing. Take care when handling empty containers; the vapour/residue could be flammable. Avoid contact with eyes and skin. Do not eat, drink or smoke in the area of application. Take measures against electrostatic charges.

7.2. Conditions for safe storage taking into account incompatibilities

Store closed drums with bungholes facing upwards. Store in tightly closed, properly ventilated containers, away from heat, sparks, open flame and strong oxidisers. The vapour-filled space above the stored liquid may be highly flammable/explosive if not covered with inert gas. May self-react / polymerise / release heat / increase temperature and pressure / possibly burst container if not restrained. Carbon steel storage is recommended. Fire classification: Extremely flammable liquid.

Specific requirements or rules related to the substance/mixture

Extremely flammable liquid.

7.3. Specific end uses

(For specific information see the exposure scenario)

SECTION 8: Exposure controls/personal protective equipment

8.1. Parameters to be monitored

Germany

Substance name (component)	Type	Exposure time	Value	Note	Source
Tetrahydrofuran (CAS: 109-99-9)	AGW	8 hours	150 mg/m ³		Gestis
	AGW	Short-term	300 mg/m ³	Average value 15 minutes	
	AGW	8 hours	50 ppm		
	AGW	Short-term	100 ppm	Average value 15 minutes	
	MAK	8 hours	150 mg/m ³		
	MAK	Short-term	300 mg/m ³	Average value 15 minutes	
	MAK	8 hours	50 ppm		
	MAK	Short-term	100 ppm	Average value 15 minutes	

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DNEL

Tetrahydrofuran

Worker / Consumer	Way of exposure	Value	Effect	Valuation
Workers	Inhalation	300 mg/m ³	Acute systematic effects	
Workers	Inhalation	300 mg/m ³	Acute local effects	
Workers	Dermal	25 mg/kg body weight /day	Chronic systemic effects	
Workers	Inhalation	150 mg/m ³	Chronic systemic effects	
Workers	Inhalation	150 mg/m ³	Chronic local effects	
Consumer	Inhalation	150 mg/m ³	Acute systematic effects	
Consumer	Inhalation	150 mg/m ³	Acute local effects	
Consumer	Dermal	15 mg/kg body weight /day	Chronic systemic effects	
Consumer	Inhalation	62 mg/m ³	Chronic systemic effects	
Consumer	Oral	15 mg/kg body weight /day	Chronic systemic effects	
Consumer	Inhalation	75 mg/m ³	Chronic local effects	

PNEC

Tetrahydrofuran

Way of exposure	Value	Valuation
Drinking water	4.32 mg/l	
Seawater	0.432 mg/l	
Water (regular tearing out)	21.6 mg/l	
Sea sediments	2.3 mg/kg	
Freshwater sediments	23.3 mg/kg	
Soil (agricultural)	2.1 mg/kg	
Microorganisms in sewage treatment plant	4.6 mg/l	

8.2. Exposure controls and monitoring

Observe the usual health protection measures and especially good ventilation. This can only be achieved by local exhaust ventilation or effective complete ventilation. If it is not possible to comply with the occupational exposure limits for hazardous substances in this way, you must use suitable respiratory protection. Do not eat, drink or smoke while working. Wash hands thoroughly with soap and water after work and before breaks to eat and rest. Technical protective measures: Electrical equipment must be earthed and comply with current electrical regulations. Provide local exhaust or general ventilation throughout the room to minimise contact with fumes. Both local exhaust ventilation and good general room ventilation are required to prevent the formation of highly flammable mixtures in addition to limiting exposure.

Eye / face protection

Eye protection such as goggles or face shield must be worn if there is a possibility of eye contact from splashing liquid, airborne particles or vapour (EN 166).

Skin protection

Depending on the conditions of use, protective gloves, protective leather, boots, head and face protection should be worn.

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Breathing protection

Half mask with filter against organic vapours, possibly respirator if the occupational exposure limits of the substances are exceeded or in a poorly ventilated environment.

Thermal hazards

Not applicable.

Limitation and monitoring of environmental exposure

Observe the usual environmental protection measures, see point 6.2.

Other information

Hygiene measures: The selection of appropriate personal protective equipment shall be based on an assessment of the performance characteristics of that protective equipment in relation to the tasks to be performed, the given conditions, the duration of the assignment and the risks and/or potential risks that may occur during the assignment. Emergency eye wash and safety shower facilities must be available in the immediate vicinity of potential exposure sites. Wash hands before eating, drinking, smoking or using the toilet. Careful personal hygiene must be carried out. Remove contaminated clothing and wash before wearing again. Do not eat, drink or smoke while working.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Condition	liquid at 20°C
Colour	colourless
Odour	After Ether
Odour threshold	the indication is not available
pH value	7.0 (undiluted)
Melting point/freezing point	-108.44 °C (at 1.013.25 hPa)
Initial boiling point and boiling range	66 °C (at 1.013.25 hPa)
Flash point	-21 °C (at 101.325 hPa, Abel-Pensky)
Evaporation rate (solid, gaseous)	the specification is not available
Upper/lower flammability or explosion limits	Extremely flammable liquid the
Flammability limits	indication is not available
Explosion limits	
lower	2 %
Upper	11 %
vapour pressure	170 hPa at 25 °C
Vapour density	the information is not available
Relative density	~2.5 at 25 °C Note: (air = 1.0)
Solubility(ies)	perfectly miscible, in any ratio the
Water solubility	indication is not available
Fat solubility	the information is not available
Partition coefficient: n-octanol/water	215.1 °C
Auto-ignition temperature	the information is not available
Decomposition temperature	the information is not available
Viscosity	There is no information available
There is no information available	
9.2. Explosive properties	
Oxidising properties	
Other information	0.880 g/cm ³ at 20 °C
Density Flammable temperature	the information is not available
Organic solvent content (VOC)	0 %

Molecular weight 72 g/mol, viscosity, kinematic 0.518 mm²/s at 25 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

May react with oxygen to form unstable peroxides. Peroxides are thermally unstable and sensitive to impact.

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10.2. Chemical stability

This product is stable when an appropriate amount (at least 200 ppm) of 2,6-di-butyl-p-cresol (DBPC) is added as an inhibitor, but is reactive (unstable) without such addition.

10.3. Possibility of hazardous reactions

It is possible under certain circumstances.

10.4. Conditions to avoid

Heat, sparks, open fire, other ignition sources, and oxidative conditions.

10.5. Incompatible materials

Reacts very actively with strong oxidants and acids.

10.6. Hazardous decomposition products

Note: Heat cracking may produce carbon monoxide and other toxic fumes.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

unmentioned

Acute toxicity

Harmful if swallowed. Not classified due to data that are clear but insufficient for classification.

Tetrahydrofuran

Way of exposure	Parameter	Value	Exposure time	Art	Gender
Oral	LD ₅₀	1,650 mg/kg		Rat	
Inhalation	LC ₅₀	14.7 mg/l	6 hrs.	Rat	
Dermal	LD ₅₀	>2000 mg/kg		Rabbit	

Corrosive/irritant effect on the skin

Based on available information, the criteria for classification are not met.

Serious eye damage/irritation

Causes severe eye irritation.

Sensitisation of the respiratory tract/skin

Based on available information, the criteria for classification are not met.

Germ cell mutagenicity

Based on available information, the criteria for classification are not met.

Carcinogenicity

Suspected of being carcinogenic. High lifetime exposure to tetrahydrofuran caused liver tumours in female mice via a non-genotoxic mode of action. Tumour formation is of little significance in exposures that do not produce persistent liver lesions. In male rats, there was an increase in renal tumours through a mode of origin that is not relevant to human health.

Reproductive toxicity

Based on available information, the criteria for classification are not met.

Specific target organ toxicity at single exposure

Conclusive, but not sufficient for classification.

Specific target organ toxicity in case of repeated exposure

Based on available information, the criteria for classification are not met.

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Aspiration hazard

Not classified because of data that are clear but not sufficient for classification.

SECTION 12: Environmental information

12.1. Toxicity

Acute toxicity

Very low acute toxicity to fish. Low acute toxicity to aquatic invertebrates. Low toxicity to algae. Low chronic toxicity to fish.

Tetrahydrofuran

Parameter	Method	Value	Exposure time	Art	Environment
LC ₅₀	OECD 203	2.160 mg/l	96 hrs.	Fish (Pimephales promelas)	
LC ₅₀	OECD 202	3.485 mg/l	48 hrs.	Daphnia (Daphnia magna)	
NOEC		3,700 mg/l	8 Day	Algae (Scenedesmus quadricauda (green algae))	
IC ₅₀		460 mg/l		Bacteria	Activated sludge mm

Chronic toxicity

Tetrahydrofuran

Parameter	Value	Exposure time	Art	Environment
NOEC	216 mg/l	33 Day	Fish (Pimephales promelas)	

12.2. Persistence and degradability

39 % Test duration: 28 d Method: OECD Test Guideline 301D Potentially biodegradable. 61 % Test duration: 52 d Method: OECD Test Guideline 301D Potentially biodegradable.

12.3. Bioaccumulation potential

Bioconcentration Factor (BCF): 3.16 Method: (calculated QSAR value) This material is not expected to bioaccumulate.

12.4. Mobility in soil

This substance is neither persistent, bioaccumulative nor toxic (PBT),. This substance is neither highly persistent nor highly bioaccumulative (vPvB).

12.5. Results of the PBT and vPvB assessment

The product does not contain any substances that fulfil the criteria for PBT or vPvB according to Annex XIII of Regulation (EC) No 1907/2006 (REACH) of the European Parliament and of the Council as amended.

12.6. Other adverse effects

Other ecological information: No additional information available.

SECTION 13: Disposal instructions

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13.1 Waste treatment processes

Risk of contamination of the environment, proceed in accordance with the Waste Act as well as the implementing regulations on waste disposal. Proceed in accordance with the applicable regulations on waste disposal. Place an unused product and soiled packaging in containers marked for waste collection and hand them over for disposal to a person (specialised company) authorised to carry out such activities. Do not pour an unused product into the sewage system. Do not dispose of together with municipal waste. Empty packaging may be used energetically in a waste incineration plant or deposited in a landfill of the appropriate incorporation. Completely cleaned packaging can be handed over for recycling.

Contaminated material, soil, water can be problem waste because of the potential low flash point.

Observe the relevant local, state or international regulations regarding the disposal of special or hazardous waste and/or containers.

Waste regulations

Hazardous waste according to the List of Wastes Ordinance. Announcement No. 383/2001 Coll., on details of waste handling, as amended. Notice No. 93/2016 Coll., (Waste Catalogue), as amended. Notice No. 94/2016 Coll., on the Assessment of Hazardous Properties of Wastes, as amended.

Waste designation

07 00 00 WASTES FROM ORGANIC CHEMICAL PROCESSES

Waste designation for the packaging

15 01 10 Packaging containing residues of or contaminated by hazardous substances *

(*) - hazardous waste within the meaning of Directive 91/689/EEC on hazardous waste.

SECTION 14: Transport information

14.1. UN number

UN 2056

14.2. UN proper shipping name

TETRAHYDROFURAN

14.3. Transport hazard classes

3 Flammable liquid substances

14.4. Packing group

II - Substances with medium hazard

14.5. Environmental hazards

unmentioned

14.6. Special precautions for the user

Note in sections 4 to 8.

14.7. Carriage in bulk in accordance with Annex II of the MARPOL Convention and the IBC Code

unmentioned

Further information

If you require information on transport, please contact the Logistics Compliance Department at: dangerousgoods@lyondellbasell.com

Number identifying the hazard UN

number

Classification code

Safety sign

33

(Kemler Code)

2056

F1

3



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Air Transport - ICAO/IATA Packing

Instructions Passenger Packing 353

Instructions Cargo 364

Maritime transport - IMDG

EmS (Emergency Plan) F-E, S-D

SECTION 15: Legislation

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

Regulation of the European Parliament and of the Council (EC) No 1907/2006 of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation of the European Parliament and of the Council (EC) No 1272/2008 of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, as amended. Act No. 350/2011 Coll., on Chemical Substances and Chemical Mixtures and on the Amendment of Certain Acts (Chemical Act). Announcement No. 432/2003 Coll., establishing the conditions for categorisation of works, limit values of indicators of biological exposure tests, conditions of taking biological material for carrying out biological exposure tests and matters of notification of works with asbestos and biological exponents, as amended.

15.2. Chemical Safety Assessment

A chemical safety assessment has been carried out for this substance.

Other information

WGK (Germany)¹ slightly hazardous to water. United States (US): Proven carcinogenic to animals with unknown relevance to humans. Skin.

SECTION 16: Other information

The list of standard phrases on the hazard in the safety data sheet uses

H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed. Causes severe eye
H319 irritation.
H335 May irritate the respiratory tract.
H351 May probably cause cancer.

The list of precautionary statements in the safety data sheet uses

P202 before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not smoke.
P233 Keep container tightly closed. Wear protective gloves/protective clothing/eye protection/face protection. Immediately call a POISON CENTRE/ or doctor.
P280 protection/face protection. Immediately call a POISON CENTRE/ or doctor.
P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if possible. Continue rinsing.
P305+P351+P338 In case of fire: Use powder fire extinguisher/carbon dioxide/water spray or alcohol-resistant foam to extinguish.
P370+P378 Dispose of contents/container to a recognised waste disposal facility.

P501

Read and understand all safety instructions

The list of additional hazard information in the safety data sheet used

EUH 019 Can form explosive peroxides.

Other important information regarding human safety and health

The product must not - without special permission from the manufacturer / importer - be used for any purpose other than that specified in section 1. The user is responsible for compliance with all related health and safety regulations.

Legend for abbreviations and acronyms used in the safety data sheet

ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
Occupational exposure limit values

AGW

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BCF	Bioconcentration factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP Regulation)
DNEL	Derived exposure level without impairment
EC ₅₀	The effective concentration of a substance that causes 50% of the maximum possible
EC	reaction Identification code for each substance given in the EINECS
EINECS	European Inventory of Existing Commercial Chemical Substances Emergency Plan
EmS	European Union
EU	International Association of Airlifters
IATA	International regulation for the construction and equipment of ships for the
IBC	transport of hazardous chemicals
	Concentration causing 50% blockade International Civil
IC ₅₀	Aviation Organization
ICAO	International Carriage of Dangerous Goods by Sea International
IMDG	Nomenclature for Cosmetic Ingredients International Organisation for
INCI	Standardisation
ISO	International Union for Pure and Applied Chemistry
IUPAC	Lethal concentration of a chemical substance that kills 50% of a sample Lethal
LC ₅₀	concentration of a substance that kills 50% of the population Lowest concentration
LD ₅₀	with observable adverse effect
LOAEC	Lowest dose with observable adverse effect Octanol-
LOAEL	water Partition coefficient
log Kow	Maximum workplace concentrations
MAK	The International Convention for the Prevention of Pollution from Ships
MARPOL	Concentration without observable adverse effect Dose
	without observable adverse effect
NOAEC	Highest tested concentration without observed adverse effect Dose
NOAEL	without observable effect
NOEC	Permissible occupational exposure limits
NOEL	Persistent, bioaccumulative and toxic
OEL	Estimated non-effect concentration Parts per
PBT	million
PNEC	Registration, Evaluation, Authorisation and Restriction of Chemicals Convention on
ppm	the Transport of Dangerous Goods by Rail
REACH	Four-digit number used to identify substances or articles in accordance with the UN
RID	Model Regulations.
UN	Substances with unknown or variable composition, complex reaction products and
	biological materials
UVCB	Volatile organic compounds
	Very persistent and very bioaccumulative
VOC	
vPvB	
Acute Tox.	Acute toxicity
Carc.	Carcinogenicity Eye
Eye Irrit.	irritation Liquid
Flam. Liq.	flammable
STOT SE	Specific target organ toxicity at single exposure

Instructions for the training

Familiarise employees with the recommended manner of use, compulsory safety equipment, first aid and permitted handling of the product.

Recommended restrictions of use

unmentioned

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CREATON SWELLING AGENT

Creation date	30 July 2018	Version number	1.0
Revised on			

Information on the sources of the data used in the compilation of the safety data sheet

SAFETY DATA SHEET

in accordance with Regulation (EC) No 1907/2006 of the European Parliament as amended.

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Regulation of the European Parliament and of the Council (EC) No 1907/2006 (REACH) as amended. Regulation of the European Parliament and of the Council (EC) No 1272/2008, as amended. Act No. 350/2011 Coll., on Chemical Substances and Chemical Mixtures, as amended. Principles for ensuring first aid in case of exposure to chemical substances (Zásady pro poskytování první pomoci při expozici chemickým látkám, Doz. MUDr. Daniela Pelclová, CSc., MUDr. Alexandr Fuchs, CSc., MUDr. Miroslava Hornychová, CSc., MUDr. Zdeňka Trávníčková, CSc., Jiřina Fridrichovská, prom. Chem.). Data from the manufacturer of the substance/mixture, if available - information from the registration documentation.

Other information

Disclaimer: Section 1 may list multiple legal entities and registration numbers. The recipient should refer to the shipping documents to identify the legal entity that supplied this product. This document contains health, safety and environmental information. This information is correct to the best of our knowledge at the date of publication of the safety data sheet.

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Explanation

The safety data sheet contains information to ensure occupational safety and health protection as well as environmental protection. The information given corresponds to the current state of knowledge and experience and is in accordance with the applicable legal provisions. They cannot be regarded as a guarantee of the suitability and applicability of the product for a specific application.