

# Safety data sheet

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



## Sodium hypochlorite solution 12 % Cl, technical

article number: **9062**  
Version: **4.0 en**  
Replaces version of: 2019-07-25  
Version: (3)

date of compilation: 2016-07-14  
Revision: 2020-06-10

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

### 1.1 Product identifier

Identification of the substance	<b>Sodium hypochlorite solution</b>
Article number	9062
Registration number (REACH)	01-2119488154-34-xxxx
Index No	017-011-00-1
EC number	231-668-3
CAS number	7681-52-9

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

**Identified uses:** laboratory chemical  
laboratory and analytical use

### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:** +49 (0) 721 - 56 06 0  
**Telefax:** +49 (0) 721 - 56 06 149  
**e-mail:** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)  
**Website:** [www.carlroth.de](http://www.carlroth.de)

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

**e-mail (competent person):** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

### 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Centre Beaumont Hospital	Beaumont Road	Dublin 9	01 809 2166	<a href="https://www.poisons.ie/">https://www.poisons.ie/</a>

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
2.16	substance or mixture corrosive to metals	(Met. Corr. 1)	H290
3.2	skin corrosion/irritation	(Skin Corr. 1B)	H314

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Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
3.3	serious eye damage/eye irritation	(Eye Dam. 1)	H318
4.1A	hazardous to the aquatic environment - acute hazard	(Aquatic Acute 1)	H400
4.1C	hazardous to the aquatic environment - chronic hazard	(Aquatic Chronic 2)	H411

### Supplemental hazard information

Code	Supplemental hazard information
EUH031	contact with acids liberates toxic gas

## 2.2 Label elements

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

#### Signal word

**Danger**

#### Pictograms

GHS05, GHS09



#### Hazard statements

H290 May be corrosive to metals  
H314 Causes severe skin burns and eye damage  
H410 Very toxic to aquatic life with long lasting effects

#### Precautionary statements

##### Precautionary statements - prevention

P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

##### Precautionary statements - response

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor.

#### Supplemental hazard information

EUH031 Contact with acids liberates toxic gas.

#### **Hazardous ingredients for labelling:**

Sodium hypochlorite, solution ... % Cl active, Sodium hydroxide

#### **Labelling of packages where the contents do not exceed 125 ml**

Signal word: **Danger**

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Symbol(s)



H314 Causes severe skin burns and eye damage.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor.  
EUH031 Contact with acids liberates toxic gas.  
contains: Sodium hypochlorite, solution ... % Cl active, Sodium hydroxide

### 2.3 Other hazards

There is no additional information.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Description of the mixture

Composition/information on ingredients.

Name of substance	Identifier	wt %	Classification acc. to 1272/2008/EC	Pictograms	Specific Conc. Limits	M-Factors
Sodium hypochlorite, solution ... % Cl active	CAS No 7681-52-9  EC No 231-668-3  Index No 017-011-00-1  REACH Reg. No 01- 2119488154- 34-xxxx	5 – 15	Skin Corr. 1B / H314 Eye Dam. 1 / H318 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 EUH031			M-factor (acute) = 10.0
Sodium hydroxide	CAS No 1310-73-2  EC No 215-185-5  Index No 011-002-00-6  REACH Reg. No 01- 2119457892- 27-xxxx	1 – <2	Met. Corr. 1 / H290 Skin Corr. 1A / H314 Eye Dam. 1 / H318		Skin Corr. 1A; H314: C ≥ 5 % Skin Corr. 1B; H314: 2 % ≤ C < 5 % Skin Irrit. 2; H315: 0,5 % ≤ C < 2 % Eye Dam. 1; H318: C ≥ 2 % Eye Irrit. 2; H319: 0,5 % ≤ C < 2 %	

#### Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

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### SECTION 4: First aid measures

#### 4.1 Description of first aid measures



##### General notes

Take off immediately all contaminated clothing. Self-protection of the first aider.

##### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

##### Following skin contact

After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

##### Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

##### Following ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

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

Corrosion, Cough, Risk of blindness, Gastric perforation, Risk of serious damage to eyes, Dyspnoea

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

none

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media



##### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings  
water spray, foam, dry extinguishing powder, carbon dioxide (CO<sub>2</sub>)

##### Unsuitable extinguishing media

water jet

#### 5.2 Special hazards arising from the substance or mixture

Non-combustible.

##### Hazardous combustion products

In case of fire may be liberated: hydrogen chloride (HCl), chlorine (Cl<sub>2</sub>), May produce toxic fumes of carbon monoxide if burning.

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### 5.3 Advice for firefighters

Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures



#### For non-emergency personnel

Provision of sufficient ventilation. Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

#### Advice on how to contain a spill

Covering of drains.

#### Advice on how to clean up a spill

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

#### Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 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

Handle and open container with care. Provide adequate ventilation.

#### Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

### 7.2 Conditions for safe storage, including any incompatibilities

Protect from sunlight. Keep only in the original container. Due to gaseous decomposition products, overpressure can occur in tightly sealed containers.

#### Incompatible substances or mixtures

Observe hints for combined storage.

#### Consideration of other advice

##### • Ventilation requirements

Use local and general ventilation.

##### • Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C.

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### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

#### Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Notation	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Source
IE	sodium hydroxide	1310-73-2		OELV			2				S.I. No. 619 of 2001

#### Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

#### Relevant DNELs/DMELs/PNECs and other threshold levels

##### • relevant DNELs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Sodium hypochlorite, solution ... % Cl active	7681-52-9	DNEL	1,55 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
Sodium hypochlorite, solution ... % Cl active	7681-52-9	DNEL	3,1 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	acute - systemic effects
Sodium hypochlorite, solution ... % Cl active	7681-52-9	DNEL	1,55 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects
Sodium hypochlorite, solution ... % Cl active	7681-52-9	DNEL	3,1 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	acute - local effects
Sodium hydroxide	1310-73-2	DNEL	1 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
Sodium hydroxide	1310-73-2	DNEL	1 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects

##### • relevant PNECs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment	Exposure time
Sodium hypochlorite, solution ... % Cl active	7681-52-9	PNEC	0,21 µg/l	freshwater	short-term (single instance)
Sodium hypochlorite, solution ... % Cl active	7681-52-9	PNEC	0,042 µg/l	marine water	short-term (single instance)

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Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment	Exposure time
Sodium hypochlorite, solution ... % Cl active	7681-52-9	PNEC	4,69 mg/l	sewage treatment plant (STP)	short-term (single instance)

### 8.2 Exposure controls

#### Individual protection measures (personal protective equipment)

##### Eye/face protection



Use safety goggle with side protection. Wear face protection.

##### Skin protection



##### • hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

##### • type of material

Butyl caoutchouc (butyl rubber)

##### • material thickness

0,5 mm.

##### • breakthrough times of the glove material

>480 minutes (permeation: level 6)

##### • other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

##### Respiratory protection

Respiratory protection necessary at: Aerosol or mist formation. Type: B-P2 (combined filters for acidic gases and particles, colour code: Grey/White).

Respiratory protection necessary at: Aerosol or mist formation.

##### Environmental exposure controls

Keep away from drains, surface and ground water.

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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

##### Appearance

Physical state	liquid (fluid)
Colour	light yellow - light green
Odour	like: chlorine
Odour threshold	No data available

##### Other physical and chemical parameters

pH (value)	12 - 13 (20 °C)
Melting point/freezing point	-25 °C
Initial boiling point and boiling range	98 °C
Flash point	not determined
Evaporation rate	no data available
Flammability (solid, gas)	not relevant (fluid)
<u>Explosive limits</u>	
• lower explosion limit (LEL)	this information is not available
• upper explosion limit (UEL)	this information is not available
Explosion limits of dust clouds	not relevant
Vapour pressure	23 hPa
Density	1,22 - 1,26 g/cm <sup>3</sup> at 20 °C
Vapour density	This information is not available.
Bulk density	Not applicable
Relative density	Information on this property is not available.
<u>Solubility(ies)</u>	
Water solubility	miscible in any proportion
<u>Partition coefficient</u>	
n-octanol/water (log KOW)	-3,42 (20 °C)
Auto-ignition temperature	Information on this property is not available.
Decomposition temperature	>111 °C
Viscosity	
• kinematic viscosity	2,222 mm <sup>2</sup> /s at 20 °C
• dynamic viscosity	2,8 mPa s at 20 °C
Explosive properties	Shall not be classified as explosive
Oxidising properties	none

#### 9.2 Other information

There is no additional information.



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### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

Substance or mixture corrosive to metals.

#### 10.2 Chemical stability

Reactivity if exposed to light. Slow decomposition of the material.

#### 10.3 Possibility of hazardous reactions

Violent reaction with: Amines, Ammonia (NH<sub>3</sub>), Ammonia (NH<sub>3</sub>), Organic substances, Oxidisers, Reducing agents, Formic acid, Acetic anhydride, Methanol, Cyanide, Dangerous/dangerous reactions with: Acids,

=>

Release of an acute toxic gas: Chlorine

#### 10.4 Conditions to avoid

Keep away from heat. Decomposition takes place from temperatures above: >111 °C.

#### 10.5 Incompatible materials

different metals

#### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

Shall not be classified as acutely toxic.

##### • Acute toxicity of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Sodium hypochlorite, solution ... % Cl active	7681-52-9	oral	1.100 mg/kg

##### Skin corrosion/irritation

Causes severe burns.

##### Serious eye damage/eye irritation

Causes serious eye damage.

##### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

##### Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

##### • Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

##### • Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

##### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

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### Symptoms related to the physical, chemical and toxicological characteristics

#### • If swallowed

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects)

#### • If in eyes

causes burns, Causes serious eye damage, risk of blindness

#### • If inhaled

cough, Dyspnoea

#### • If on skin

causes severe burns, causes poorly healing wounds

### Other information

None

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxic to aquatic life with long lasting effects.

#### Aquatic toxicity (acute)

Very toxic to aquatic organisms.

#### Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Sodium hypochlorite, solution ... % Cl active	7681-52-9	EC50	35 µg/l	aquatic invertebrates	48 h
Sodium hypochlorite, solution ... % Cl active	7681-52-9	ErC50	0,036 mg/l	algae	72 h
Sodium hydroxide	1310-73-2	EC50	40,4 mg/l	water flea (Daphnia)	48 h

#### Aquatic toxicity (chronic)

May cause long-term adverse effects in the aquatic environment.

### 12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW) -3,42 (20 °C)

#### Bioaccumulative potential of components of the mixture

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Sodium hypochlorite, solution ... % Cl active	7681-52-9		-3,42 (pH value: 12,5, 20 °C)	

### 12.4 Mobility in soil

Data are not available.

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### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Other adverse effects

Data are not 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. Avoid release to the environment. Refer to special instructions/safety data sheets.

#### 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

14.1	UN number	1791
14.2	UN proper shipping name	<b>HYPOCHLORITE SOLUTION</b>
	Hazardous ingredients	Sodium hypochlorite, solution ... % Cl active, Sodium hydroxide
14.3	Transport hazard class(es)	
	Class	8 (corrosive substances)
14.4	Packing group	II (substance presenting medium danger)
14.5	Environmental hazards	hazardous to the aquatic environment (Sodium hypochlorite, solution ... % Cl active)
14.6	<b>Special precautions for user</b>	
	Provisions for dangerous goods (ADR) should be complied within the premises.	
14.7	<b>Transport in bulk according to Annex II of MARPOL and the IBC Code</b>	
	The cargo is not intended to be carried in bulk.	
14.8	<b>Information for each of the UN Model Regulations</b>	

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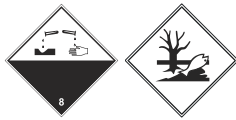


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### • Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

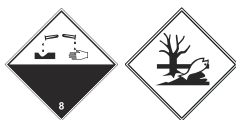
UN number	1791
Proper shipping name	HYPOCHLORITE SOLUTION
Particulars in the transport document	UN1791, HYPOCHLORITE SOLUTION, 8, II, (E), environmentally hazardous
Class	8
Classification code	C9
Packing group	II
Danger label(s)	8 + "fish and tree"



Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	521
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	E
Hazard identification No	80

### • International Maritime Dangerous Goods Code (IMDG)

UN number	1791
Proper shipping name	HYPOCHLORITE SOLUTION
Particulars in the shipper's declaration	UN1791, HYPOCHLORITE SOLUTION, (contains: Sodium hypochlorite, solution ... % Cl active, Sodium hydroxide), 8, II, MARINE POLLUTANT
Class	8
Marine pollutant	yes (P) (hazardous to the aquatic environment)
Packing group	II
Danger label(s)	8 + "fish and tree"



Special provisions (SP)	274, 900
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-A, S-B
Stowage category	B
Segregation group	8 - Hypochlorites

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### • International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	1791
Proper shipping name	Hypochlorite solution
Particulars in the shipper's declaration	UN1791, Hypochlorite solution, 8, II
Class	8
Environmental hazards	yes (hazardous to the aquatic environment)
Packing group	II
Danger label(s)	8



Special provisions (SP)	A3
Excepted quantities (EQ)	E2
Limited quantities (LQ)	0,5 L

## SECTION 15: Regulatory information

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

#### Relevant provisions of the European Union (EU)

##### • Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)

None of the ingredients are listed.

##### • Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)

None of the ingredients are listed.

##### • Regulation 850/2004/EC on persistent organic pollutants (POP)

None of the ingredients are listed.

##### • Restrictions according to REACH, Annex XVII

Name of substance	CAS No	Wt%	Type of registration	Conditions of restriction	No
Sodium hypochlorite solution		100	1907/2006/EC annex XVII	R3	3

#### Legend

R3

- Shall not be used in:
  - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
  - tricks and jokes,
  - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
- Articles not complying with paragraph 1 shall not be placed on the market.
- Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
  - can be used as fuel in decorative oil lamps for supply to the general public, and,
  - present an aspiration hazard and are labelled with R65 or H304,
- Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
- Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
  - lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010, 'Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage';

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### Legend

(b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life threatening lung damage';  
(c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.  
6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.  
7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.

Name acc. to inventory	CAS No	Wt%	Listed in	Remarks
Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		12,5	A)	
Biocides and plant protection products		12,5	A)	

### Legend

A) Indicative list of the main pollutants

### • Restrictions according to REACH, Title VIII

None.

### • List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

none of the ingredients are listed

### • Seveso Directive

2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements		Notes
E1	environmental hazards (hazardous to the aquatic environment, cat. 1)	100	200	56)

### Notation

56) Hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

### • Directive 75/324/EEC relating to aerosol dispensers

#### Filling batch

#### Deco-Paint Directive (2004/42/EC)

VOC content	0 % -0.9/1
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#### Directive on industrial emissions (VOCs, 2010/75/EU)

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VOC content	0 %
VOC content Water content was discounted	-0.9/1

### Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

None of the ingredients are listed.

### Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

None of the ingredients are listed.

### Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

Name acc. to inventory	CAS No	Listed in	Remarks
Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		A)	
Biocides and plant protection products		A)	

#### Legend

A) Indicative list of the main pollutants

### Regulation 98/2013/EU on the marketing and use of explosives precursors

none of the ingredients are listed

### Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors

none of the ingredients are listed

### National inventories

Country	National inventories	Status
AU	AICS	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	all ingredients are listed
JP	CSCL-ENCS	all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed

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### Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

## 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

## SECTION 16: Other information

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	hazardous to the aquatic environment - acute hazard
Aquatic Chronic	hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
BCF	bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	ceiling value
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
COD	chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	seriously damaging to the eye



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Abbr.	Descriptions of used abbreviations
Eye Irrit.	irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
log KOW	n-octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
Met. Corr.	substance or mixture corrosive to metals
M-factor	means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
S.I. No. 619 of 2001	Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001
Skin Corr.	corrosive to skin
Skin Irrit.	irritant to skin
STEL	short-term exposure limit
SVHC	Substance of Very High Concern
TWA	time-weighted average
VOC	Volatile Organic Compounds
vPvB	very Persistent and very Bioaccumulative

### 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)
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

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

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Code	Text
H290	may be corrosive to metals
H314	causes severe skin burns and eye damage
H318	causes serious eye damage
H400	very toxic to aquatic life
H410	very toxic to aquatic life with long lasting effects
H411	toxic to aquatic life with long lasting effects

### Disclaimer

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.