

according to Regulation (EC) No. 1907/2006 (REACH)

4,4'-Diamino diphenyl ether in N,N-Dimethylacetamide

Version number: GHS 1.0 Date of compilation: 2020-08-05

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

1.1 Product identifier

Trade name 4,4'-Diamino diphenyl ether in N,N-Di-

methylacetamide

Registration number (REACH) not relevant (mixture)

Article number A0288448

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

Relevant identified uses General use

1.3 Details of the supplier of the safety data sheet

Chemos GmbH & Co. KG Sonnenring 7 84032 Altdorf Germany

Telephone: +49 871-966346-0 Telefax: +49 871-966346-13 e-mail: chemos@chemos.de Website: http://www.chemos.de/

e-mail (competent person) chemos@chemos.de

1.4 Emergency telephone number

Emergency information service +49 89 1 92 40

Poison centre

Country	Name	Postal code/ city	Telephone	Telefax
United Kingdom	National Poison Information Centre Medical Toxicology Unit	SE14 5ER Lon- don	+44 171 635 91 91	

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Section	Hazard class	Category	Hazard class and cat- egory	Hazard state- ment
3.10	acute toxicity (oral)	4	Acute Tox. 4	H302
3.1D	acute toxicity (dermal)	3	Acute Tox. 3	H311
3.1I	acute toxicity (inhal.)	4	Acute Tox. 4	H332
3.45	skin sensitisation	1	Skin Sens. 1	H317
3.5	germ cell mutagenicity	1B	Muta. 1B	H340
3.6	carcinogenicity	1B	Carc. 1B	H350
3.7	reproductive toxicity	1B	Repr. 1B	H360Df
3.9	specific target organ toxicity - repeated exposure	2	STOT RE 2	H373

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Section	Hazard class	Category	Hazard class and cat- egory	Hazard state- ment
4.1A	hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400
4.1C	hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

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

- Signal word danger

- Pictograms

GHS06, GHS08, GHS09







- Hazard statements

H302+H332 Harmful if swallowed or if inhaled.

H311 Toxic in contact with skin.

H317 May cause an allergic skin reaction.

H340 May cause genetic defects.

H350 May cause cancer.

H360Df May damage the unborn child. Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

- Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P312 Call a POISON CENTRE/doctor if you feel unwell.

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P362+P364 Take off contaminated clothing and wash it before reuse.

P391 Collect spillage.

P501 Dispose of contents/container to industrial combustion plant.

- Hazardous ingredients for labelling

4,4'-oxydianiline and its salts, N,N-dimethylacetamide

2.3 Other hazards

This material is combustible, but will not ignite readily.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
N,N-dimethylacetamide	CAS No 127-19-5	71.43	Acute Tox. 4 / H312 Acute Tox. 4 / H332 Repr. 1B / H360D	<u>(1)</u>
	EC No 204-826-4		керг. тв / поооо	* *
	Index No 616-011-00-4			
4,4'-oxydianiline and its salts	CAS No 101-80-4	28.57	Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 3 / H331	
	EC No 202-977-0		Skin Sens. 1 / H317 Muta. 1B / H340 Carc. 1B / H350	* * *
	Index No 612-199-00-7		Repr. 2 / H361f STOT RE 2 / H373	
	REACH Reg. No 01-2119485173-37- xxxx		Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411	

For full text of abbreviations: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

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

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

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.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

- Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

Coun- try	Name of agent	CAS No	Identi- fier		TWA [mg/m³]	STEL [ppm]		Ceiling-C [mg/m³]	Source
EU	N,N-dimethylacet- amide	127-19-5	IOELV	10	36	20	72		2000/ 39/EC
GB	N,N-dimethylacet- amide	127-19-5	WEL	10	36	20	72		EH40/ 2005

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 peri-

od (unless otherwise specified)
TWA time-weighted average (long-te)

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)

I	Country	Name of agent	Parameter	Notation	Identifier	Value	Source
	GB	N,N-dimethylacetamide	N-methylacetamide	crea	BMGV	100 mmol/mol	EH40/2005

Notation

crea creatinine

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Relevant PNECs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
4,4'-oxydianiline and its salts	101-80-4	PNEC	1.8 ^{µg} / _l	aquatic organisms	freshwater	short-term (single instance)
4,4'-oxydianiline and its salts	101-80-4	PNEC	0.18 ^{µg} / _l	aquatic organisms	marine water	short-term (single instance)
4,4'-oxydianiline and its salts	101-80-4	PNEC	10 ^{mg} / _l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
4,4'-oxydianiline and its salts	101-80-4	PNEC	14.6 ^{µg} / _{kg}	aquatic organisms	freshwater sedi- ment	short-term (single instance)
4,4'-oxydianiline and its salts	101-80-4	PNEC	1.46 ^{µg} / _{kg}	aquatic organisms	marine sediment	short-term (single instance)
4,4'-oxydianiline and its salts	101-80-4	PNEC	1.898 ^{µg} / _{kg}	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/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. In the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties Appearance

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Physical state	liquid
Colour	various
Odour	characteristic

Other safety parameters

pH (value)	not determined
Melting point/freezing point	-20 °C
Initial boiling point and boiling range	166 °C at 1,013 hPa
Flash point	64 °C at 1,013 hPa
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)
Explosive limits	not determined
Vapour pressure	2 hPa at 21.7 °C
Density	not determined
Vapour density	this information is not available
Relative density	information on this property is not available
Solubility(ies)	not determined

Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	345 °C (auto-ignition temperature (liquids and gases))
Viscosity	not determined
Explosive properties	none
Oxidising properties	none

9.2 Other information

Solvent content	71.43 %
Solid content	28.57 %
Temperature class (EU, acc. to ATEX)	T2 (maximum permissible surface temperature on the equipment: 300°C)

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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Harmful if swallowed. Toxic in contact with skin. Harmful if inhaled.

- Acute toxicity estimate (ATE)

 $\begin{array}{ll} \text{Oral} & 350 \, ^{\text{mg}}/_{\text{kg}} \\ \text{Dermal} & 624.3 \, ^{\text{mg}}/_{\text{kg}} \\ \text{Inhalation: vapour} & 15.4 \, ^{\text{mg}}/_{\text{l}}/4h \end{array}$

Acute toxicity estimate (ATE) of components of the mixture

Name of substance	CAS No	Exposure route	ATE
N,N-dimethylacetamide	127-19-5	dermal	1,100 ^{mg} / _{kg}
N,N-dimethylacetamide	127-19-5	inhalation: vapour	11 ^{mg} / _l /4h
4,4'-oxydianiline and its salts	101-80-4	oral	100 ^{mg} / _{kg}
4,4'-oxydianiline and its salts	101-80-4	dermal	300 ^{mg} / _{kg}
4,4'-oxydianiline and its salts	101-80-4	inhalation: dust/mist	0.5 ^{mg} / _l /4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

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Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

May cause genetic defects.

Carcinogenicity

May cause cancer.

Reproductive toxicity

May damage the unborn child. Suspected of damaging fertility.

Specific target organ toxicity - single exposure

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

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
N,N-dimethylacetamide	127-19-5	LC50	>500 ^{mg} / _l	fish	96 h
N,N-dimethylacetamide	127-19-5	EC50	>500 ^{mg} / _l	aquatic invertebrates	48 h
N,N-dimethylacetamide	127-19-5	ErC50	>500 ^{mg} / _l	algae	72 h
4,4'-oxydianiline and its salts	101-80-4	LC50	22 ^{mg} / _l	fish	96 h
4,4'-oxydianiline and its salts	101-80-4	EC50	>100 ^{µg} / _I	aquatic invertebrates	48 h
4,4'-oxydianiline and its salts	101-80-4	ErC50	21.7 ^{mg} / _l	algae	72 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
4,4'-oxydianiline and its salts	101-80-4	EC50	>1,000 ^{mg} / _l	microorganisms	3 h

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12.2 Persistence and degradability

Degradability of components of the mixture

Name of sub- stance	CAS No	Process	Degradation rate	Time	Method	Source
N,N-di- methylacetamide	127-19-5	oxygen depletion	8.7 %	1 d		ECHA
4,4'-oxydianiline and its salts	101-80-4	oxygen depletion	7.6 %	28 d		ECHA

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
N,N-dimethylacetamide	127-19-5		-0.77 (25 °C)	
4,4'-oxydianiline and its salts	101-80-4		0.72	

12.4 Mobility in soil

Data are not available.

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

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. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

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

SECTION 14: Transport information

14.1 UN number 2810

14.2 UN proper shipping name TOXIC LIQUID, ORGANIC, N.O.S.

Technical name (hazardous ingredients) 4,4'-oxydianiline and its salts

14.3 Transport hazard class(es)

Class 6.1 (toxic substances) (environmentally hazardous)

14.4 Packing group III (substance presenting low danger)

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14.5 Environmental hazards

hazardous to the aquatic environment

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

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.

Information for each of the UN Model Regulations

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

UN number 2810

Proper shipping name TOXIC LIQUID, ORGANIC, N.O.S.

Class 6.1
Classification code T1
Packing group III

Danger label(s) 6.1, fish and tree



Environmental hazards yes (hazardous to the aquatic environment)

Special provisions (SP) 274, 614, 802(ADN)

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L
Transport category (TC) 2
Tunnel restriction code (TRC) E
Hazard identification No 60
Emergency Action Code 2X

International Maritime Dangerous Goods Code (IMDG)

UN number 2810

Proper shipping name TOXIC LIQUID, ORGANIC, N.O.S.

Class 6.1

Marine pollutant yes (hazardous to the aquatic environment)

Packing group III

Danger label(s) 6.1, fish and tree



Special provisions (SP) 223, 274

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L

EmS F-A, S-A

Stowage category A

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International Civil Aviation Organization (ICAO-IATA/DGR)

UN number 2810

Proper shipping name Toxic liquid, organic, n.o.s.

Class 6.1

Environmental hazards yes (hazardous to the aquatic environment)

Packing group III
Danger label(s) 6.1

Special provisions (SP) A3, A4, A137

Excepted quantities (EQ) E1
Limited quantities (LQ) 2 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)

Deco-Paint Directive (2004/42/EC)

VOC content	71.43 %
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Directive on industrial emissions (VOCs, 2010/75/EU)

VOC southant	100.0/
VOC content	100 %

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	
2000/39/EC	Commission Directive establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC	
Acute Tox.	Acute toxicity	
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	

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Abbr.	Descriptions of used abbreviations
Carc.	Carcinogenicity
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
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
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)
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
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
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
IOELV	Indicative occupational exposure limit value
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
log KOW	n-Octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
Muta.	Germ cell mutagenicity
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
Repr.	Reproductive toxicity
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)

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Abbr.	Descriptions of used abbreviations	
Skin Sens.	Skin sensitisation	
STEL	Short-term exposure limit	
STOT RE	Specific target organ toxicity - repeated exposure	
TWA	Time-weighted average	
VOC	Volatile Organic Compounds	
vPvB	Very Persistent and very Bioaccumulative	
WEL	Workplace exposure limit	

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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

Code	Text	
H301	Toxic if swallowed.	
H302	Harmful if swallowed.	
H311	Toxic in contact with skin.	
H312	Harmful in contact with skin.	
H317	May cause an allergic skin reaction.	
H331	Toxic if inhaled.	
H332	Harmful if inhaled.	
H340	May cause genetic defects.	
H350	May cause cancer.	
H360D	May damage the unborn child.	
H360Df	May damage the unborn child. Suspected of damaging fertility.	
H361f	Suspected of damaging fertility.	
H373	May cause damage to organs through prolonged or repeated exposure.	
H400	Very toxic to aquatic life.	
H411	Toxic to aquatic life with long lasting effects.	

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

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