

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006 as amended by Regulation (EC) No. 453/2010

Created on: 22.06.2015
Revision date: 22.09.2015
Valid from: 01.10.2015
Version: gac_dss_V.15.2_en

Print date: 23.09.2015
Replaces version: gac_dss_V.15.1_en

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1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Substance name/trade name: Geberit AquaClean
Article number: 811 (1x125ml)

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

Relevant identified uses: Descaling agent
Uses advised against: The product (mixture) should not be used in combination with other cleaning / descaling products.

1.3 Details of the supplier of the safety data sheet

Manufacturer: düring ag
Street/PO Box: Brunnenwiesenstrasse 14
Country code/postal code/city: CH-8108 Dällikon
Contact for technical information: +41 44 847 27 47
Telephone: +41 44 847 27 47 Fax: +41 44 844 38 90 E-Mail: info@dueringag.ch
Distributor/importer (Europa): Geberit International AG
Street/PO Box: Schachenstrasse 77
Country code/postal code/city: CH-8645 Jona
Telephone: +41 55 221 63 00

1.4 Emergency telephone number

National: Swiss Toxicological Information Centre, Zürich 145 or +41 44 251 51 51
International: Poison Emergency Center of the Charité - University of Medicine, Berlin
+49 30 306 867 90

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008, Annex VII:
Eye Irrit. 2, H319 / Skin Irrit. 2, H315

2.2 Label elements

Labelling elements in accordance with Regulation (EC) No. 1272/2008, Annex VII:



Hazard symbol: GHS07 Signal word: Warning

Hazard-determining components of labelling:
Contains: Phosphoric acid, Hydrochloric acid

Hazard warnings according to CLP/GHS Regulation (EC) No. 1272/2008 (H-phrases):
Health Hazards:

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Safety precautions according to CLP/GHS Regulation (EC) No. 1272/2008 (P-phrases):

General

P102 Keep out of reach of children.

Prävention

P280 Wear protective gloves/eye protection.

Reaction

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

No

3. Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

The product is an aqueous mixture with the following hazardous ingredients.

Name of substance: **Phosphoric acid**

EG-No.: 231-633-2

CAS-No.: 7664-38-2

Index-No.: 015-011-00-6

REACH-Reg.-No.: 01-2119485924-24

Content: < 25%

Classification according to Regulation (EC) No. 1272/2008:



Skin Corr. 1B, H314

Name of substance: **Hydrochloric acid**

EG-No.: 213-595-7

CAS-No.: 7647-01-0

Index-No.: 017-002-01-X

REACH-Reg.-No.: 01-2120066883-46

Content: < 5%

Classification according to Regulation (EC) No. 1272/2008:



Skin Corr. 1B, H314



STOT SE 3, H335

Aquatic Chronic 3, H412

[The wording of not in section 2. referred hazard statements are described in section 16.]

4. First aid measures

4.1 Description of first aid measures

Remove contaminated clothing immediately. If you feel unwell, consult a doctor/medical service.
Show this data sheet or the product label.

After inhalation

If vapour or mist was inhaled, breathe fresh air. In case of irritation of the respiratory system seek medical attention.

After skin contact

Wash affected skin with soap and plenty of water.

After eye contact

Remove any contact lenses. Rinse opened eye for several minutes with plenty of water. If necessary, consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water and drink plenty of water in small sips. Do not induce vomiting. In case of indisposition, seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Direct contact may cause irritation of skin and mucous membranes. Toxicological effects on humans are currently unknown.

4.3 Indication of any immediate medical attention and special treatment needed

Depending on the contact, the measures specified in Section 4.1 must be respected.

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5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water spray, foam, carbon dioxide and powder

Unsuitable extinguishing media: Water spray jet

5.2 Special hazards arising from the substance or mixture

The product is not flammable. Upon contact with metals may evolve hydrogen gas (Risk of explosion).

5.3 Advice for firefighters

Staying in hazard area only with protective clothing and a self-contained breathing apparatus. Cool endangered packagings and containers with sprayed water and, if possible, remove them out of the danger zone. Prevent the penetration of extinguishing water into surface water or groundwater.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Do not breathe vapour or mist. Ensure adequate ventilation. Avoid skin and eye contact.

6.2 Environmental precautions

Prevent the penetration of the product (mixture) in water, sewer and soil. Confine with sand or similar material. Collect product mechanically and fill it in marked container. Cover drains to prevent the entering of product into the sewerage, if necessary.

6.3 Methods and material for containment and cleaning up

Pump off large quantities of product. Take up residues with absorbent materials (sand, sawdust etc.), collect it in suitable containers and dispose it in accordance to official regulations. Dilute small spilled quantities (up to approx. 1 Liter) with much water and dispose it in the drains.

6.4 Reference to other sections

Observe protective measures in sections 7., 8. and 13.

7. Handling and storage

7.1 Precautions for safe handling

Do not leave containers open. Avoid contact with eyes and skin. Use only in well ventilated areas.

Measures to protect against fire and explosions

The product is not flammable and not explosive.

Measures to prevent dusts and aerosols

Use the product according to the application description and do not spray.

Measures to protect the environment

The product should not used undiluted to enter the environment.

General hygiene measures

Observe the usual precautions as when handling chemicals (At work do not eat, drink or smoke).

Wash hands after use.

7.2 Conditions for safe storage, including any incompatibilities

Information about storage conditions

Store product in original container tightly closed in a cool, well ventilated place. Do not store together with medicines, foods, beverages or feedstuffs.

Requirements for storage rooms and containers

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Recommended storage conditions: The product should be stored at temperatures between 5 °C to 30 °C.

Note: Increased temperatures, e.g. during transport, do not affect the product properties.

Storage class: 8B (VCI) Non flammable corrosive substances.

Durability: At least 3 years

7.3 Specific end use(s)

Special descaler for Geberit AquaClean systems. Additional information please refer to the label.

8. Exposure controls/personal protection

8.1 Control parameters

Name of substance: **Phosphoric acid**

EG-No.: 231-633-2

CAS-No.: 7664-38-2

Index-No.: 015-011-00-6

Specification: TRGS 900 - AGW (Air limit values at the work place; Status 02/02/2015)

AGW: - ml/m³ (ppm) 2 E mg/m³

Peak limitation category: 2(I)

Remarks: DFG, EU, AGS, Y

Y = These are substances for which a risk of foetal damages under the AGW (air limit values at the work place) and BGW (biological limit values) need not be feared.

Specification: 2000/39/EG

STEL (Short-term value): - ml/m³ (ppm) 2 mg/m³

In a period of 15 minutes the threshold concentration shall not be exceeded.

8h TWA (Long-term value): - ml/m³ (ppm) 1 mg/m³

Other limit values

DNEL-values: 2.92 mg/m³ Workers, long-term exposure, inhalation
0.73 mg/m³ Population, long-term exposure, inhalation

PNEC-values: No data available

NOAEL/NOAEC-values: 876 mg/m³ Based on AF 300
438 mg/m³ Based on AF 300

Notes and comments:

No

Name of substance: **Hydrochloric acid**

EG-No.: 213-595-7

CAS-No.: 7647-01-0

Index-No.: 017-002-01-X

Specification: TRGS 900 - AGW (Air limit values at the work place; Status 02/02/2015)

AGW: 2 ml/m³ (ppm) 3 mg/m³

Peak limitation category: 2(I)

Remarks: DFG, EU, Y

Y = These are substances for which a risk of foetal damages under the AGW (air limit values at the work place) and BGW (biological limit values) need not be feared.

Specification: 2000/39/EG

STEL (Short-term value): 10 ml/m³ (ppm) 15 mg/m³

In a period of 15 minutes the threshold concentration shall not be exceeded.

8h TWA (Long-term value): 5 ml/m³ (ppm) 8 mg/m³

Other limit values

DNEL-values: 15 mg/m³ Workers, short-term exposure, inhalation
8 mg/m³ Workers, long-term exposure, inhalation

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PNEC-values: 36 µg/l Freshwater
36 µg/l Seawater
36 µg/l Sewage treatment plants
45 µg/l Sporadic release

NOAEL/NOAEC-values: No data available

Notes and comments:

No

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Technical measures are not required for the application of the product.

8.2.2 Individual protection measures, such as personal protective equipment

Eye / face protection



A special eye / face protection is not required. A direct eye contact with the product should be avoided.

Skin protection



A special skin protection is not required. A direct skin contact with the product should be avoided.

Body protection



A special protective equipment is not required.

Respiratory protection



When used as directed, a respiratory protection is not necessary.

8.2.3 Environmental exposure controls

The product should not used undiluted to enter the environment.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:

Liquid

Farbe:

Colorless

Odour:

Weak, characteristic

pH-value undiluted:

< 1.0 [20°C]

DIN 19268

Acid reserve:

approx. 9.5 g NaOH/100g product

J.R. Young et al.

Rating numbers:

> -0.5 ∩ < 1.0

BZ{1} ∩ BZ{2}

Labelling result:

GHS07, Warning

Melting Point / freezing point:

approx. 0 °C [1013 hPa]

By Trottoli

Initial boiling point / boiling range:

approx. 100 °C

DIN 38404 C4

Flash point:

Not applicable

Inflammability:

The product is not flammable or explosive.

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Upper flammability / explosive limit:	Not applicable			
Lower flammability / explosive limit:	Not applicable			
Vapour pressure:	120	hPa	[20°C]	Calculated
Relative density:	1.14	g/cm ³	[20°C]	ISO 2811-3
Water solubility:	The product is completely soluble and miscible.			
Dynamic viscosity:	2.80	cP	[25°C]	DIN 53221
Kinematic viscosity:	2.46	cSt	[25°C]	Calculated
VOC-Content:	Not applicable			

9.2 Other information

No

10. Stability and reactivity

10.1 Reactivity

Reacts with strong oxidants and bases under generation of heat. Reacts with carbonates to form carbon dioxide.

10.2 Chemical stability

Under standard ambient conditions (room temperature), the product is chemically stable.

10.3 Possibility of hazardous reactions

When used as directed no hazardous reactions are expected.

10.4 Conditions to avoid

The product should not be used in combination with other cleaning/descaling agents.

10.5 Incompatible materials

Acid-labile resins (POM), inferior stainless steel, thin/damaged chrome plating, silver and marble are attacked.

10.6 Hazardous decomposition products

Under normal conditions, hazardous decomposition products are not expected.

11. Toxicological information

11.1 Information on toxicological effects

Name of substance: **Phosphoric acid**

EG-No.: 231-633-2

CAS-No.: 7664-38-2

Index-No.: 015-011-00-6

Acute toxicity

LD50 (oral, Rat), 1530 mg/kg (IUCLID)

LC50 (1h) (inhalation, Rabbit), 1.69 mg/l (IUCLID)

LD50 (dermal, Rabbit), 2740 mg/kg (IUCLID)

Corrosion / irritation to the skin

Skin (rabbit), OECD 404 (2.5%), no skin irritation (IUCLID)

Skin (rabbit), 24h (80%), severe skin irritation (IUCLID)

Strong corrosive effect to skin and mucous membranes (conventional method).

Serious eye damage / eye irritation

Eyes (rabbit), OECD 405 (10% and 17%), no eye irritation (IUCLID)

Sensitization of respiratory/skin

Basierend auf den verfügbaren Daten sind die Einstufungskriterien nicht erfüllt (konventionelle Methode). Bisher sind keine sensibilisierenden Wirkungen bekannt.

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Germ cell mutagenicity:

No data available

Carcinogenicity

IARC: No component of this product, present at levels greater than or equal to 0.1%, is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation

Inhalation (aerosols) can cause irritation of the upper respiratory tract.

Ingestion

Causes gastrointestinal upset and irritation of mucous membranes. In severe cases, possible formation of coagulation necrosis.

Skin

Causes burns to skin and mucous membranes.

Eye

Direct eye contact may cause burns.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms and signs of poisoning are: burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, Nausea, vomiting. Inhalation may provoke the following symptoms: spasm, inflammation and edema of the bronchi, spasm, inflammation and edema of the larynx. Aspiration or inhalation may cause chemical pneumonitis.

Name of substance: **Hydrochloric acid**

EG-No.: 213-595-7

CAS-No.: 7647-01-0

Index-No.: 017-002-01-X

Acute toxicity

LD50 (oral, rat), 700 mg/kg (IUCLID)

LD50 (oral, rabbit), 900 mg/kg (IUCLID)

LC50 (1h) (inhalation, rat), 3124 mg/l (IUCLID)

LD50 (dermal, rabbit), > 5010 mg/kg (IUCLID)

Corrosion / irritation to the skin

Skin (rabbit), 0.5 ml (1%) daily for 5 days, no skin irritation (IUCLID)

Skin (rabbit), 0.5 ml (3.3%) daily for 5 days, severe skin irritation (IUCLID)

Based on the available data, the classification criteria are not fulfilled (Conventional method).

Serious eye damage / eye irritation

Eyes (rabbit), 0.1 ml (0.33%) 48h, no eye irritation (IUCLID)

Eyes (rabbit), 0.1 ml (3.3%) 48h, slight eye irritation (IUCLID)

Sensitization of respiratory/skin

Based on the available data, the classification criteria are not fulfilled (Conventional method). So far, no sensitizing effects are known.

Germ cell mutagenicity:

No data available

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Carcinogenicity

IARC: No component of this product, present at levels greater than or equal to 0.1%, is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation

Inhalation (aerosols) can cause irritation of the upper respiratory tract.

Ingestion

Causes gastrointestinal upset and irritation of mucous membranes. In severe cases, possible formation of coagulation necrosis.

Skin

Causes burns to skin and mucous membranes.

Eye

Direct eye contact may cause burns.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms and signs of poisoning are: burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, Nausea, vomiting. Inhalation may provoke the following symptoms: spasm, inflammation and edema of the bronchi, spasm, inflammation and edema of the larynx. Aspiration or inhalation may cause chemical pneumonitis.

11.2 Other notes and information

RTECS: No data available

The information specified in section 11.1 are valid only for pure substances and not for the product (mixture).

12. Ecological information

12.1 Toxicity

Name of substance: **Phosphoric acid**

EG-No.: 231-633-2

CAS-No.: 7664-38-2

Index-No.: 015-011-00-6

Acute toxicity to Fish

Lepomis macrochirus (bluegill); static (96h); 70.3 mg/l; 50% mortality at pH 3-3.5; LD50 equivalent dose; sublethal effects even at higher pH values (IUCLID)

Acute toxicity to aquatic Invertebrates

Daphnia magna; EC50 (12h); > 29 mg/l; 50% mortality at pH 4.6; LD50 equivalent dose (IUCLID)

Daphnia pulex; EC50 (12h); 50% mortality at pH 4.1; LD50 equivalent dose (IUCLID)

Toxicity to Aquatic Plants e.g. Algae

No data available

Toxicity to Microorganisms e.g. Bacteria

No data available

Chronic toxicity to Fish

No data available

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Chronic toxicity to aquatic Invertebrates
No data available

Name of substance: **Hydrochloric acid**

EG-No.: 213-595-7

CAS-No.: 7647-01-0

Index-No.: 017-002-01-X

Acute toxicity to Fish

Leuciscus idus (Ide); LC50 (48h); 862 mg/l (IUCLID)

Gambusia affinis (Mosquitofish); LC50 (96h); 282 mg/l (IUCLID)

Acute toxicity to aquatic Invertebrates

Daphnia magna; LC80 (72h); 56 mg/l (IUCLID)

Toxicity to Aquatic Plants e.g. Algae

No data available

Toxicity to Microorganisms e.g. Bacteria

No data available

Chronic toxicity to Fish

No data available

Chronic toxicity to aquatic Invertebrates

No data available

12.2 Persistence and degradability

The biodegradability of this product has no relevance, because the theoretical degradable organic content is below 0.1%.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

Harmful effects by lowering the pH-value are possible.

13. Disposal considerations

13.1 Waste treatment methods

According to the Waste Catalogue Ordinance 2001/118/EC (AVV) the product and product leftovers are not classified as a hazardous waste. If recycling is not possible, waste must be removed in compliance with local regulations.

Product

Waste code according to AVV: 20 01 30 Detergents other than those mentioned in 20 01 29

Recommendation for disposal

The correct waste code number has to be determined in accordance with the local waste disposer. For small quantities a disposal into drains is possible.

Packing

Packing material: PET-Bottles

Waste code according to AVV: 15 01 02 Plastic packaging

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Recommendation for disposal

Contaminated packaging: Empty, not dried out container must be disposed of as containers of harmful residues.

Cleaned packaging: Uncontaminated and cleaned packaging can be recycled.

Recommended cleaning agent

Water

Special precautions

Observe protective measures in sections 6., 7. and 8.

14. Transport information

The product (mixture) is according to ADR/RID 2015, IMDG/ ADNR and IATA/ICAO classified in Class 8 corrosive substances and should be treated as dangerous goods.



14.1 UN-Nummer

3264

14.2 UN proper shipping name

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS PHOSPHORIC ACID AND HYDROCHLORIC ACID)

ADR/RID

Transport category: 3

Tunnel restriction code: E

Hazard-No. (Kemler Zahl): 80 (Corrosive or slightly corrosive substance)

IMDG/ADNR

EmS-Code: F-A, S-B

IATA/ICAO

Not applicable

14.3 Transport hazard class(es)

Hazard class: 8

Classification code: C1

14.4 Packing group

III

14.5 Environmental hazards

The product (mixture) leads into waters to a reduction of the pH-value.

Marine Pollutant: No

14.6 Special precautions for user

Observe protective measures in sections 6., 7. and 8.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable

14.8 Other notes and information

Limited Quantity (LQ): 5 Liter

Excepted Quantity (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

The product (mixture) in its trading units falls below the quantity limitations of transport regulations and must be transported as Limited Quantity (LQ or LTD QTY).

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UN model regulations: UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(CONTAINS PHOSPHORIC ACID AND HYDROCHLORIC ACID), 8, III, (E)

15. Regulatory information

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

EU legislation

Regulation (EC) No. 2037/2000 (Substances that deplete the ozone layer)

Not applicable

Regulation (EC) No. 850/2004 (Persistent organic pollutants)

Not applicable

Regulation (EC) No 689/2008 (Export and import of dangerous chemicals):

Not applicable

Regulation (EG) No. 648/2004 (Detergent)

The product (mixture) meets the criteria laid down in Regulation (EC) No 648/2004.

Restrictions under Title VIII of the Regulation (EC) 1907/2006

No

National regulations

Water hazard class according VwVwS, Annex 4 (Germany)

WGK: 1 weakly water polluting

Solvent regulation (31. BImSchV) (Germany)

VOC-content: Not applicable

Hazardous Incident Ordinance (12. BImSchV) (Germany)

Not applicable

Technical instructions on air quality (TA-Luft) (Germany)

Not applicable

Reference to technical rules for hazardous substances (TRGS) (Germany)

TRGS 900 - AGW (Air limit values at the work place; Status 02/02/2015), see section 8.1

15.2 Chemical safety assessment

Until now, the product (mixture) was not subjected to a human-toxicological safety assessment. In analogy to the individual components, the product (mixture) was evaluated in terms of human toxicology for the intended use as safe.

16. Other information

16.1 Changes since the last version

[V.15.1] The entries in section 2. and 3. according to the Directives 67/548/EEC and 1999/45/EC were deleted. Both Directives are/were repealed with the 01.06.2015 and replaced by Regulation (EC) No. 1272/2008.

[V.15.2] Corrections general nature with no impact on labelling etc.

Author of the material safety data sheet

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16.2 Literature and data sources

REACH Regulation (EC) No. 1907/2006, as last amended by Regulation (EC) No. 301/2014

CLP Regulation (EC) No. 1272/2008, as last amended by Regulation (EG) No. 286/20011

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J.R. Young, M.J. How, A.P. Walker, W.M.H. Worth, Classification as Corrosive or Irritant to Skin of Preparations Containing Acidic or Alkaline Substances without Testing on Animals, Toxic. In Vitro, Bd. 2, No. 1, 1988, S. 19-26

Internet

<http://echa.europa.eu/>
<http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances>
<http://chem.sis.nlm.nih.gov/chemidplus/>
<http://www.bag.admin.ch/themen/chemikalien/>
<http://www.dguv.de/ifa/Gefahrstoffdatenbanken/GESTIS-Stoffdatenbank/index.jsp>
<http://www.reach-info.de/verordnungstext.htm>
<http://www.baua.de/de/Startseite.html>

16.3 Hazard warnings which are referred in section 2. and 3.

Accordance with the CLP Regulation (EC) No. 1272/2008

Skin Corr. 1B; H314; Corrosivity/irritation of the skin; Category 1B; Causes severe skin burns and eye damage.

Skin Irrit. 2, H315; Corrosivity/irritation of the skin; Category 2; Causes skin irritation.

Eye Irrit. 2, H319; Serious eye damage/eye irritation; Category 2; Causes severe eye irritation.

STOT SE 3, H335; Specific target organ toxicity - single exposure - Category 3; May cause respiratory irritation.

Aquatic Chronic 3, H412; CHRONIC AQUATIC TOXICITY - Category 3; Harmful to aquatic life with long lasting effects.

16.4 Methods according to Article 9 of the Regulation (EC) No 1272/2008 of the evaluation of data for classification purposes

Classification in accordance with Regulation (EC) No 1272/2008, Annex VII (Conversion table).

16.5 Other product-related information:

No

16.6 Legend of abbreviations used

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AF	Overall Assessment Factor
AGS	Committee on Hazardous Substances
AGW	Occupational Exposure Limits
AVV	Wastes Ordinance
BAT	Biological workplace concentration
BGW	biological tolerance for work
BImSchV	Regulation on the implementation of the Federal Pollution Control Act (Germany)
BZ	Acid reserve rating numbers {1} and {2} for labelling classification
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging (Regulation)
DFG	Senate Commission for the investigation of health hazards of substances. MAK Commission of the Deutsche Forschungsgemeinschaft (DFG)
DIN	Norms of the German Institute for Standardization
DNEL	Derived No Effect Level
DOC	Dissolved Organic Carbon
EC	Effective Concentration
EC/EEC	European Community / European Economic Community
ECHA	European Chemicals Agency
EN	Europäische Norm
EQ	Excepted Quantity (Freigestellte Menge)

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006 as amended by Regulation (EC) No. 453/2010

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EU	European Union
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
GWP	Global Warming Potential
HD-PE	High density polyethylene, thermoplastic
IARC	International Agency for Research on Cancer
IATA-DGR	International Air Transport Association - Dangerous Goods Regulations
IBC-Code	International Building Code
ICAO-TI	International Civil Aviation Organization - Technical Instructions
IMDG	International Maritime Dangerous Goods
ISO	Norms of the International Standards Organization
INCI	International Nomenclature of Cosmetic Ingredients
IUCLID	International Uniform Chemical Information Database
LC	Lethal Concentration
LD	Lethal Dose
LQ	Limited Quantity
MAK	Occupational Exposure Limit
MARPOL	Maritime Pollution Convention
NIOSH	National Institut of Occupational Safety & Health
NOAEL/NOAEC	No Observed Adverse Effect Level/Concentration
ODP	Ozone Depleting Potential (Ozonabbaupotential)
OECD	Organization for Economic Cooperation and Development
PBT	Persistent, bioaccumulative, toxic
PET	Polyethylene terephthalate, thermoplastic
PNEC	Predicted No Effect Concentration
POM	Polyoxymethylene (polyacetal) thermoplastic
REACH	Registration, Evaluation and Authorisation of Chemicals (Regulation)
RID	Rules for international carriage of dangerous goods by rail
RTECS	Registry of Toxic Effects of Chemical Substances
STEL	Short-Term Exposure Limit (Grenzwert für Kurzzeitexposition)
TRGS	Technical Rules for Hazardous Substances
STOT	Specific Target Organ Toxicity
STP	Sewage Treatment Plant
TRbF	Technical Regulations of flammable liquids
UN	United Nations
VbF	Regulations for flammable liquids (Germany)
VCI	German Chemical Industry Association
VOC	Volatile Organic Compounds
vPvB	Very persistent and very bioaccumulative
VwVwS	Administrative Regulation on substances hazardous to water (Germany)
WGK	Water hazard class

This safety data sheet corresponds to Article 31 and Annex II of the REACH Regulation (EC) No. 1907/2006, as amended by Regulation (EU) No. 453/2010. The above information is based on our present knowledge and describes the safety requirements of the substances or the product (mixture), however they are no assurance of product properties and do not justify a contractual legal relationship.