



Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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:

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

1.1. Product identifier

Product form : Mixture
Name : Perchloric acid 0.1M Volumetric Solution
as specified in appendix 1B of the British Pharmacopoeia
(BPV 685)
Product code : BPV685

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

1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use
Industrial/Professional use spec : Industrial
For professional use only
Function or use category : Laboratory chemicals

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Spectracer UK Ltd.

Second Floor,
27 Gloucester Place,
London,
W1U 8HU,
United Kingdom.

Tel: +44 (0) 207 193 9114

Fax: +44 (0) 203 432 4686

Email: contact@spectracer.co.uk

Web: www.spectracer.com

1.4. Emergency telephone number

Emergency number : 112 (EU)

Country	Organisation/Company	Address	Emergency number
IRELAND (REPUBLIC OF)	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	: +353 1 8379964
UNITED KINGDOM	National Poisons Information Service (NHS Direct)	http://www.npis.org	111 (England & Wales only) or 112 (EU) or 08454 24 24 24 (Scotland)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flam. Liq. 3 H226

Ox. Liq. 2 H272

Skin Corr. 1A H314

Full text of H-statements: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

C; R35

R10

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS05

Signal word (CLP) :

Danger

Hazardous ingredients :

acetic acid

Hazard statements (CLP) :

H226 - Flammable liquid and vapour
H272 - May intensify fire; oxidiser
H314 - Causes severe skin burns and eye damage

Precautionary statements (CLP) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P220 - Keep/Store away from combustible materials
P221 - Take any precaution to avoid mixing with combustible materials
P233 - Keep container tightly closed
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P260 - Do not breathe fume, vapours, mist
P264 - Wash hands and other exposed areas thoroughly after handling
P280 - Wear eye protection, protective clothing, protective gloves, 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/shower
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

No labelling applicable

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
acetic acid	(CAS No) 64-19-7 (EC no) 200-580-7 (EC index no) 607-002-00-6	>= 80	C; R35 R10
acetic anhydride	(CAS No) 108-24-7 (EC no) 203-564-8 (EC index no) 607-008-00-9	1 - 5	R10 Xn; R20/22 C; R34
perchloric acid substance with national workplace exposure limit(s) (BG, CZ, PL)	(CAS No) 7601-90-3 (EC no) 231-512-4 (EC index no) 017-006-00-4	0,1 - 1	O; R8 C; R35 R5

Name	Product identifier	Specific concentration limits
acetic acid	(CAS No) 64-19-7 (EC no) 200-580-7 (EC index no) 607-002-00-6	(10 =< C < 25) Xi;R36/38 (25 =< C < 90) C;R34 (C >= 90) C;R35
acetic anhydride	(CAS No) 108-24-7 (EC no) 203-564-8 (EC index no) 607-008-00-9	(1 =< C < 5) Xi;R36 (5 =< C < 25) Xi;R37/38-41 (C >= 25) C;R34



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Name	Product identifier	Specific concentration limits	
perchloric acid	(CAS No) 7601-90-3 (EC no) 231-512-4 (EC index no) 017-006-00-4	(1 =< C < 10) Xi;R36/38 (10 =< C < 50) C;R34 (C >= 50) O;R5-8 (C >= 50) C;R35	
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
acetic acid	(CAS No) 64-19-7 (EC no) 200-580-7 (EC index no) 607-002-00-6	>= 80	Flam. Liq. 3, H226 Skin Corr. 1A, H314
acetic anhydride	(CAS No) 108-24-7 (EC no) 203-564-8 (EC index no) 607-008-00-9	1 - 5	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314
perchloric acid substance with national workplace exposure limit(s) (BG, CZ, PL)	(CAS No) 7601-90-3 (EC no) 231-512-4 (EC index no) 017-006-00-4	0,1 - 1	Ox. Liq. 1, H271 Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314
Name	Product identifier	Specific concentration limits	
acetic acid	(CAS No) 64-19-7 (EC no) 200-580-7 (EC index no) 607-002-00-6	(10 =< C < 25) Eye Irrit. 2, H319 (10 =< C < 25) Skin Irrit. 2, H315 (25 =< C < 90) Skin Corr. 1B, H314 (C >= 90) Skin Corr. 1A, H314	
acetic anhydride	(CAS No) 108-24-7 (EC no) 203-564-8 (EC index no) 607-008-00-9	(1 =< C < 5) Eye Irrit. 2, H319 (5 =< C < 25) Skin Irrit. 2, H315 (5 =< C < 25) Eye Dam. 1, H318 (C >= 5) STOT SE 3, H335 (C >= 25) Skin Corr. 1B, H314	
perchloric acid	(CAS No) 7601-90-3 (EC no) 231-512-4 (EC index no) 017-006-00-4	(C < 50) Ox. Liq. 2, H272 (1 =< C < 10) Eye Irrit. 2, H319 (1 =< C < 10) Skin Irrit. 2, H315 (10 =< C < 50) Skin Corr. 1B, H314 (C >= 50) Ox. Liq. 1, H271 (C >= 50) Skin Corr. 1A, H314	

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after skin contact	: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/injuries	: Causes severe skin burns and eye damage.
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4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable liquid and vapour. May intensify fire; oxidiser.
Explosion hazard	: May form flammable/explosive vapour-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.



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5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Fight fire remotely due to the risk of explosion.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if substance enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Hazardous waste due to potential risk of explosion.
- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Take any precaution to avoid mixing with combustible materials. Do not breathe dust, fume, gas, mist, spray, vapours. Avoid contact during pregnancy/while nursing.
- Hygiene measures : Wash Skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Comply with applicable regulations. Use explosion-proof Flame proof, lighting, electrical equipment and ventilation equipment.
- Storage conditions : Keep container tightly closed. Keep in fireproof place. Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat and ignition sources.
- Incompatible products : Strong bases. Strong acids.
- Incompatible materials : Sources of ignition. Direct sunlight. Heat sources. combustible materials.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

acetic acid (64-19-7)		
EU	IOELV TWA (mg/m ³)	25 mg/m ³ (Acetic acid; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	10 ppm (Acetic acid; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)



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acetic acid (64-19-7)		
Austria	Local name	Essigsäure
Austria	MAK (mg/m ³)	25 mg/m ³
Austria	MAK (ppm)	10 ppm
Austria	MAK Short time value (mg/m ³)	50 mg/m ³
Austria	MAK Short time value (ppm)	20 ppm
Belgium	Local name	Acide acétique
Belgium	Limit value (mg/m ³)	25 mg/m ³
Belgium	Limit value (ppm)	10 ppm
Belgium	Short time value (mg/m ³)	38 mg/m ³
Belgium	Short time value (ppm)	15 ppm
Bulgaria	Local name	Оцетна киселина*
Bulgaria	OEL TWA (mg/m ³)	25 mg/m ³
Bulgaria	OEL STEL (mg/m ³)	37 mg/m ³
Croatia	Local name	Octena kiselina
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	25 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	10 ppm
Croatia	Naznake (HR)	EU, C
Czech Republic	Local name	Kyselina octová
Czech Republic	Expoziční limity (PEL) (mg/m ³)	25 mg/m ³
Czech Republic	Expoziční limity (PEL) (ppm)	10 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	35 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (ppm)	14,3 ppm
Denmark	Local name	Eddikesyre
Denmark	Grænseværdie (langvarig) (mg/m ³)	25 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	10 ppm
Denmark	Anmærkninger (DK)	E
Estonia	Local name	Etaanhape (äädikhape)
Estonia	OEL TWA (mg/m ³)	25 mg/m ³
Estonia	OEL TWA (ppm)	10 ppm
Estonia	OEL STEL (mg/m ³)	25 mg/m ³
Estonia	OEL STEL (ppm)	10 ppm
Finland	Local name	Etikkahappo
Finland	HTP-arvo (8h) (mg/m ³)	13 mg/m ³
Finland	HTP-arvo (8h) (ppm)	5 ppm
Finland	HTP-arvo (15 min)	25 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	10 ppm
France	Local name	Acide acétique
France	VLE (mg/m ³)	25 mg/m ³
France	VLE (ppm)	10 ppm
Germany	Local name	Essigsäure
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	25 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	10 ppm
Germany	Remark (TRGS 900)	DFG,EU,Y
Greece	OEL TWA (mg/m ³)	25 mg/m ³
Greece	OEL TWA (ppm)	10 ppm
Greece	OEL STEL (mg/m ³)	37 mg/m ³
Greece	OEL STEL (ppm)	15 ppm



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acetic acid (64-19-7)		
Hungary	Local name	ECETSAV
Hungary	AK-érték	25 mg/m ³
Hungary	CK-érték	25 mg/m ³
Hungary	Megjegyzések (HU)	m; l.
Ireland	Local name	Acetic acid
Ireland	OEL (8 hours ref) (mg/m ³)	25 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	10 ppm
Ireland	OEL (15 min ref) (mg/m ³)	37 mg/m ³
Ireland	OEL (15 min ref) (ppm)	15 ppm
Ireland	Notes (IE)	IOELV
Latvia	Local name	Etiķskābe, etānskābe
Latvia	OEL TWA (mg/m ³)	25 mg/m ³
Latvia	OEL TWA (ppm)	10 ppm
Lithuania	Local name	Acto rūgštis
Lithuania	IPRV (mg/m ³)	25 mg/m ³
Lithuania	IPRV (ppm)	10 ppm
Luxembourg	Local name	Acide acétique
Luxembourg	OEL TWA (mg/m ³)	25 mg/m ³
Luxembourg	OEL TWA (ppm)	10 ppm
Malta	Local name	Acetic acid
Malta	OEL TWA (mg/m ³)	25 mg/m ³
Malta	OEL TWA (ppm)	10 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	25 mg/m ³ (Azijnzuur; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Poland	Local name	Kwas octowy
Poland	NDS (mg/m ³)	15 mg/m ³
Poland	NDSch (mg/m ³)	30 mg/m ³
Portugal	Local name	Ácido acético
Portugal	OEL TWA (ppm)	10 ppm
Portugal	OEL STEL (ppm)	15 ppm
Romania	Local name	Acid acetic
Romania	OEL TWA (mg/m ³)	25 mg/m ³
Romania	OEL TWA (ppm)	10 ppm
Slovenia	Local name	očetna kislina
Slovenia	OEL TWA (mg/m ³)	25 mg/m ³
Slovenia	OEL TWA (ppm)	10 ppm
Spain	Local name	Ácido acético
Spain	VLA-ED (mg/m ³)	25 mg/m ³
Spain	VLA-ED (ppm)	10 ppm
Spain	VLA-EC (mg/m ³)	37 mg/m ³
Spain	VLA-EC (ppm)	15 ppm
Sweden	Local name	Acetic acid
Sweden	nivågränsvärde (NVG) (mg/m ³)	13 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	5 ppm



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acetic acid (64-19-7)		
Sweden	kortidsvärde (KTV) (mg/m ³)	25 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	10 ppm
Iceland	Local name	Ediksýra (etansýra)
Iceland	OEL (8 hours ref) (mg/m ³)	25 mg/m ³
Iceland	OEL (8 hours ref) (ppm)	10 ppm
Norway	Local name	Eddiksyre
Norway	Grenseverdier (AN) (mg/m ³)	25 mg/m ³
Norway	Grenseverdier (AN) (ppm)	10 ppm
Switzerland	Local name	Acide acétique
Switzerland	VME (mg/m ³)	25 mg/m ³
Switzerland	VME (ppm)	10 ppm
Switzerland	VLE (mg/m ³)	50 mg/m ³
Switzerland	VLE (ppm)	20 ppm
Switzerland	Remark (CH)	4x15
Australia	Local name	Acetic acid
Australia	TWA (mg/m ³)	25 mg/m ³
Australia	TWA (ppm)	10 ppm
Australia	STEL (mg/m ³)	37 mg/m ³
Australia	STEL (ppm)	15 ppm
USA - ACGIH	Local name	Acetic acid
USA - ACGIH	ACGIH TWA (ppm)	10 ppm
USA - ACGIH	ACGIH STEL (ppm)	15 ppm
USA - ACGIH	Remark (ACGIH)	URT & eye irr; pulm func
USA - OSHA	Local name	Acetic acid
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	25 mg/m ³
USA - OSHA	OSHA PEL (TWA) (ppm)	10 ppm
perchloric acid (7601-90-3)		
Bulgaria	Local name	Перхлорна киселина
Bulgaria	OEL TWA (mg/m ³)	2 mg/m ³
Czech Republic	Local name	Kyselina chloristá
Czech Republic	Expoziční limity (PEL) (mg/m ³)	1 mg/m ³
Czech Republic	Expoziční limity (PEL) (ppm)	0,24 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	2 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (ppm)	0,49 ppm
Poland	Local name	Kwas chlorowy(VII) (nadchlorowy kwas)
Poland	NDS (mg/m ³)	1 mg/m ³
Poland	NDSch (mg/m ³)	3 mg/m ³
acetic anhydride (108-24-7)		
Belgium	Limit value (mg/m ³)	21 mg/m ³ (Anhydride acétique; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	5 ppm (Anhydride acétique; Belgium; Time-weighted average exposure limit 8 h)
France	VLE (mg/m ³)	20 mg/m ³ (Anhydride acétique; France; Short time value; VL: Valeur non réglementaire indicative)
France	VLE (ppm)	5 ppm (Anhydride acétique; France; Short time value; VL: Valeur non réglementaire indicative)

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acetic anhydride (108-24-7)		
United Kingdom	WEL TWA (mg/m ³)	2,5 mg/m ³ Acetic anhydride; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	0,5 ppm Acetic anhydride; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m ³)	10 mg/m ³ Acetic anhydride; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	2 ppm Acetic anhydride; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
USA - ACGIH	ACGIH TWA (ppm)	1 ppm (Acetic anhydride; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA - ACGIH	ACGIH STEL (ppm)	3 ppm (Acetic anhydride; USA; Short time value; TLV - Adopted Value)

8.2. Exposure controls

Appropriate engineering controls	: Provide adequate general and local exhaust ventilation.
Personal protective equipment	: Protective clothing. Protective goggles. Gloves.
Hand protection	: Wear protective gloves
Eye protection	: Chemical goggles or face shield
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended



Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Colourless.
Odour	: characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 40 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable liquid and vapour
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available



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Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: May intensify fire; oxidiser.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is stable at normal handling and storage conditions. Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

Flammable liquid and vapour. May form flammable/explosive vapour-air mixture. May intensify fire; oxidiser.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide. May release flammable gases. Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

acetic acid (64-19-7)

LD50 oral rat	3310 mg/kg bodyweight (Rat; Other; Read-across)
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perchloric acid (7601-90-3)

LD50 oral rat	1100 mg/kg (Rat)
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acetic anhydride (108-24-7)

LD50 oral rat	630 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value)
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LD50 dermal rabbit	4000 mg/kg (Rabbit; Literature study)
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LC50 inhalation rat (mg/l)	4,2 mg/l/4h (Rat)
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LC50 inhalation rat (ppm)	1000 ppm/4h (Rat)
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Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Serious eye damage, category 1, implicit
Respiratory or skin sensitisation	: Not classified Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified Based on available data, the classification criteria are not met
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met



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Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

perchloric acid (7601-90-3)	
LC50 fish 1	2000 mg/l (LC50; 96 h)
acetic anhydride (108-24-7)	
LC50 fish 2	> 300,82 mg/l (LC50; Equivalent or similar to OECD 203; 96 h; Oncorhynchus mykiss; Semi-static system; Fresh water; Read-across)

12.2. Persistence and degradability

Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685)	
Persistence and degradability	Not established.
acetic acid (64-19-7)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in soil. Very mobile in soil.
Biochemical oxygen demand (BOD)	0,6 - 0,74 g O ₂ /g substance
Chemical oxygen demand (COD)	1,03 g O ₂ /g substance
ThOD	1,07 g O ₂ /g substance
perchloric acid (7601-90-3)	
Persistence and degradability	Biodegradability: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
acetic anhydride (108-24-7)	
Persistence and degradability	Readily biodegradable in water. Inherently biodegradable. Hydrolysis in water. Very mobile in soil.

12.3. Bioaccumulative potential

Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685)	
Bioaccumulative potential	Not established.
acetic acid (64-19-7)	
BCF fish 1	3,16 (BCF; Pisces)
Log Pow	-0,17 (Experimental value; 25 °C)
Bioaccumulative potential	Low bioaccumulation potential (Log Kow < 4).
perchloric acid (7601-90-3)	
BCF fish 1	<= 1 (BCF)
Log Pow	-4,63 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.
acetic anhydride (108-24-7)	
BCF fish 1	3,16 (BCF; Pisces)
Log Pow	-0,2 (Experimental value; -0.5774; QSAR; KOWWIN)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

acetic acid (64-19-7)	
Surface tension	0,028 N/m (20 °C)
Log Koc	log Koc, 0.06; QSAR

Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685)

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acetic acid (64-19-7)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.
perchloric acid (7601-90-3)	
Surface tension	0,031 N/m (25 °C)
acetic anhydride (108-24-7)	
Surface tension	0,033 N/m (20 °C)
Log Koc	Koc,1.399; QSAR

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Additional information : Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to a licensed waste centre in accordance with local/regional/national/international regulations.
Additional information	: Handle empty containers with care because residual vapours are flammable. Hazardous waste due to potential risk of explosion.
Ecology - waste materials	: Avoid release to the environment.
European List of Waste (LoW) code	: 16 05 06* - laboratory chemicals consisting of or containing dangerous substances including mixtures of laboratory chemicals
H code	: H8 - 'Corrosive': substances and preparations which may destroy living tissue on contact. H3-B - 'Flammable': liquid substances and preparations having a flash point equal to or greater than 21 °C and less than or equal to 55 °C.

SECTION 14: Transport information

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

14.1. UN number

UN-No. (ADR)	: 2789
UN-No. (IMDG)	: 2789
UN-No. (IATA)	: 2789
UN-No. (ADN)	: 2789
UN-No. (RID)	: 2789

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ACETIC ACID SOLUTION
Proper Shipping Name (IMDG)	: ACETIC ACID SOLUTION
Proper Shipping Name (IATA)	: Acetic acid solution
Proper Shipping Name (ADN)	: ACETIC ACID SOLUTION
Proper Shipping Name (RID)	: ACETIC ACID SOLUTION
Transport document description (ADR)	: UN 2789 ACETIC ACID SOLUTION (CONTAINS ; perchloric acid(7601-90-3)), 8 (3), II, (D/E)
Transport document description (IMDG)	: UN 2789 ACETIC ACID SOLUTION, 8 (3), II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 8 (3)
Danger labels (ADR)	: 8, 3



Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685)

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IMDG

Transport hazard class(es) (IMDG) : 8 (3)
Danger labels (IMDG) : 8, 3



IATA

Transport hazard class(es) (IATA) : 8 (3)
Hazard labels (IATA) : 8, 3



ADN

Transport hazard class(es) (ADN) : 8 (3)
Danger labels (ADN) : 8, 3



RID

Transport hazard class(es) (RID) : 8 (3)
Danger labels (RID) : 8, 3



14.4. Packing group

Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available


Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685) Safety Data Sheet

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14.6. Special precautions for user

14.6.1. Overland transport

Classification code (ADR)	: CF1
Limited quantities (ADR)	: 1I
Excepted quantities (ADR)	: E2
Packing instructions (ADR)	: P001, IBC02
Mixed packing provisions (ADR)	: MP15
Portable tank and bulk container instructions (ADR)	: T7
Portable tank and bulk container special provisions (ADR)	: TP2
Tank code (ADR)	: L4BN
Vehicle for tank carriage	: FL
Transport category (ADR)	: 2
Special provisions for carriage - Operation (ADR)	: S2
Hazard identification number (Kemler No.)	: 83
Orange plates	:
	
Tunnel restriction code (ADR)	: D/E
EAC code	: •2P
APP code	: A(fl)

14.6.2. Transport by sea

Limited quantities (IMDG)	: 1L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-C
Stowage category (IMDG)	: A

14.6.3. Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y840
PCA limited quantity max net quantity (IATA)	: 0.5L
PCA packing instructions (IATA)	: 851
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 855
CAO max net quantity (IATA)	: 30L
ERG code (IATA)	: 8F

14.6.4. Inland waterway transport

Classification code (ADN)	: CF1
Limited quantities (ADN)	: 1L
Excepted quantities (ADN)	: E2
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP, EX, A
Ventilation (ADN)	: VE01



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Number of blue cones/lights (ADN) : 1
Carriage prohibited (ADN) : No
Not subject to ADN : No

14.6.5. Rail transport

Classification code (RID) : CF1
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001, IBC02
Mixed packing provisions (RID) : MP15
Portable tank and bulk container instructions (RID) : T7
Portable tank and bulk container special provisions (RID) : TP2
Tank codes for RID tanks (RID) : L4BN
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE6
Hazard identification number (RID) : 83
Carriage prohibited (RID) : No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008	Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685) - acetic acid - perchloric acid - acetic anhydride
3.a. Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F	Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685) - acetic acid - perchloric acid - acetic anhydride
3.b. Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685) - acetic acid - perchloric acid - acetic anhydride
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685) - acetic acid - acetic anhydride

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

Water hazard class (WGK) : 1 - low hazard to waters
WGK remark : Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)



Perchloric acid 0.1M Volumetric Solution as specified in appendix 1B of the British Pharmacopoeia (BPV 685)

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15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL 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.

Other information : None.

Full text of R-, H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Flam. Liq. 3	Flammable liquids, Category 3
Ox. Liq. 1	Oxidising Liquids, Category 1
Ox. Liq. 2	Oxidising Liquids, Category 2
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
H226	Flammable liquid and vapour
H271	May cause fire or explosion; strong oxidiser
H272	May intensify fire; oxidiser
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H332	Harmful if inhaled
R10	Flammable
R20/22	Harmful by inhalation and if swallowed
R34	Causes burns
R35	Causes severe burns
R5	Heating may cause an explosion
R8	Contact with combustible material may cause fire
C	Corrosive
O	Oxidising
Xn	Harmful

SDS EU Mod H F (REACH ANNEX II)

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