

**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 1 of 10

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Perchloric Acid 0.336 mol/l

**Further trade names**

This MSDS covers this product in all container sizes.

UFI: 50W7-V1CN-D00X-RQUA

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

Use as laboratory reagent. The product is intended for research, analysis and scientific education.

**Uses advised against**

Not known

**1.3. Details of the supplier of the safety data sheet**

Company name:	MORPHISTO GmbH	
Street:	Schumannstr. 142/144	
Place:	D-63069 Offenbach	
Telephone:	+49 (0) 69 / 400 3019-60	Telefax: +49 (0) 69 / 400 3019-64
e-mail:	info@morphisto.de	
Contact person:	Morphisto GmbH	
e-mail:	info@morphisto.de	
Internet:	http://www.morphisto.de	

**1.4. Emergency telephone number:**

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**

Skin Irrit. 2; H315

Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****GB CLP Regulation****Signal word:** Warning**Pictograms:****Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

**Precautionary statements**

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

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

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

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

## Safety Data Sheet

according to UK REACH Regulation

### Perchloric Acid 0.336 mol/l

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 2 of 10

P337+P313 present and easy to do. Continue rinsing.  
 If eye irritation persists: Get medical advice/attention.

#### 2.3. Other hazards

No information available.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Hazardous components

CAS No	Chemical name	Quantity
	EC No	
	Index No	
	REACH No	
	Classification (GB CLP Regulation)	
7601-90-3	perchloric acid %	1 - <10 %
	231-512-4	
	017-006-00-4	
	Ox. Liq. 1, Skin Corr. 1A; H271 H314	

Full text of H and EUH statements: see section 16.

##### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7601-90-3	231-512-4	perchloric acid %	1 - <10 %
		Ox. Liq. 1; H271: >= 50 - 100 Ox. Liq. 2; H272: >= 0 - < 50 Skin Corr. 1A; H314: >= 50 - 100 Skin Corr. 1B; H314: >= 10 - < 50 Skin Irrit. 2; H315: >= 1 - < 10 Eye Irrit. 2; H319: >= 1 - < 10	

##### Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

##### After inhalation

Provide fresh air. In case of respiratory tract irritation, consult a physician.

##### After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. After contact with skin, wash immediately with: Water. Remove contaminated, saturated clothing immediately. In case of skin irritation, seek medical treatment.

##### After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

##### After ingestion

Rinse mouth immediately and drink 1 glass of water. Rinse mouth thoroughly with water. Immediately call a POISON CENTER/doctor/?. If swallowed, immediately drink: Water.

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

No information available.

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

Treat symptomatically. Treat symptomatically.

**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 3 of 10

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings. The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings. May intensify fire; oxidiser.

**5.2. Special hazards arising from the substance or mixture**

Non-flammable. In case of fire may be liberated: Carbon monoxide Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride (HCl).

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Provide adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Provide adequate ventilation.

@1501.B150087

Do not breathe gas/fumes/vapour/spray.

Wear personal protection equipment. (See section 8. )

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. Discharge into the environment must be avoided.

**6.3. Methods and material for containment and cleaning up****For cleaning up**

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

**Other information**

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

Treat the recovered material as prescribed in the section on waste disposal.

Mit Wasser nachwischen.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13 See protective measures under point 7 and 8.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

@1501.B150087

Wear suitable protective clothing. ( See section 8. )

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat,

**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 4 of 10

drink, smoke, sniff. Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

**Further information on handling**

Conditions to avoid: Generation/formation of aerosols

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed. Keep locked up. Keep container tightly closed and in a well-ventilated place.

Recommended storage temperature: 12°-28°C

Unsuitable materials for Container: metal.

**Hints on joint storage**

Do not store together with: Oxidizing substances. Food and fodder

**Further information on storage conditions**

Keep/Store only in original container.

**7.3. Specific end use(s)**

No information available.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Additional advice on limit values**

To date, no national critical limit values exist.

**8.2. Exposure controls****Appropriate engineering controls**

Use extractor hood (laboratory).

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Suitable eye protection: goggles. Suitable eye protection: Tightly sealed safety glasses. EN 166

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. 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. Pull-over gloves of rubber. EN ISO 374

Suitable material:

(penetration time (maximum wearing period): >= 8 Stunden):

NR (Natural rubber (Caoutchouc), Natural latex). (0,5 mm)

CR (polychloroprenes, Chloroprene rubber). (0,5 mm)

NBR (Nitrile rubber). (0,35 mm)

FKM (fluororubber). (0,4 mm)

PVC (Polyvinyl chloride). (0,5 mm)

Butyl rubber. (0,5 mm)

Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well. NR (Natural rubber (Caoutchouc), Natural latex).

**Skin protection**

Use of protective clothing. Suitable protective clothing: Lab apron.

**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 5 of 10

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection. Respiratory protection necessary at:  
aerosol or mist generation.

Suitable respiratory protective equipment:

Combination filtering device (EN 14387) Filtertyp : B-P2/P3

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

**Environmental exposure controls**

@1501.B015774

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	liquid	
Colour:	colourless	
Odour:	characteristic	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		not determined
Flammability		
Solid/liquid:		not determined
Gas:		not applicable
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		not applicable
Auto-ignition temperature:		not determined
Decomposition temperature:		not determined
pH-Value:		not determined
Water solubility:		completely miscible
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:		not determined
Vapour pressure:		not determined
Density:		not determined
Relative vapour density:		not determined

**9.2. Other information****Information with regard to physical hazard classes**

Explosive properties

The product is not: Explosive. none

Oxidizing properties

none

**Other safety characteristics**

Evaporation rate: not determined

Solvent content: 0% - @1501.B150227

Solid content: not determined

**Further Information**

No information available.

**SECTION 10: Stability and reactivity**

**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 6 of 10

**10.1. Reactivity**

Possibility of hazardous reactions. No information available.

**10.2. Chemical stability**

Stable under normal storage and handling conditions.

**10.3. Possibility of hazardous reactions**

Exothermic reaction with: Base, Peroxides, Oxidizing agent. No information available.

**10.4. Conditions to avoid**

No information available.

**10.5. Incompatible materials**

Keep away from: Base, Oxidizing agent, Peroxides. Alkali metals. Reducing agents, strong. Substances which in contact with water, emit flammable gases.

**10.6. Hazardous decomposition products**In case of fire may be liberated: Carbon monoxide Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride (HCl).**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in GB CLP Regulation****Toxicokinetics, metabolism and distribution**

No information available.

**Acute toxicity**

Based on available data, the classification criteria are not met.

Akute Toxizität (oral): Ratte. LD 50: 1100 mg/kg

**Irritation and corrosivity**

Causes skin irritation.

Causes serious eye irritation.

**Sensitising effects**

Based on available data, the classification criteria are not met.

@1718.B017281

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

@1718.B017281

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

@1718.B017281

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Specific effects in experiment on an animal**

@1718.B017281

**11.2. Information on other hazards****Further information**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

**SECTION 12: Ecological information****12.1. Toxicity**

@1718.B017281

**12.2. Persistence and degradability**

@1718.B017281

**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 7 of 10

**12.3. Bioaccumulative potential**

@1718.B017281

**12.4. Mobility in soil**

@1718.B017281

**12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.  
The components in this formulation do not meet the criteria for classification as PBT or vPvB.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7. Other adverse effects**

@1718.B017281

**Further information**

Avoid release to the environment. Do not allow uncontrolled discharge of product into the environment.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation. Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal.

**List of Wastes Code - residues/unused products**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

**List of Wastes Code - used product**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

**List of Wastes Code - contaminated packaging**

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

**Contaminated packaging**

Wash with plenty of water. Completely emptied packages can be recycled. Non-contaminated packages may be recycled.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number or ID number:**

UN 1802

**14.2. UN proper shipping name:**

PERCHLORIC ACID

**14.3. Transport hazard class(es):**

8

**14.4. Packing group:**

II

Hazard label:

8+5.1



Classification code:

CO1

Special Provisions:

522

**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 8 of 10

Limited quantity: 1 L  
 Excepted quantity: E0  
 Transport category: 2  
 Hazard No: 85  
 Tunnel restriction code: E

**Inland waterways transport (ADN)**

**14.1. UN number or ID number:** UN 1802  
**14.2. UN proper shipping name:** Perchloric acid  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8+5.1



Classification code: CO1  
 Special Provisions: 522  
 Limited quantity: 1 L  
 Excepted quantity: E0

**Marine transport (IMDG)**

**14.1. UN number or ID number:** UN 1802  
**14.2. UN proper shipping name:** PERCHLORIC ACID  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8+5.1



Special Provisions: -  
 Limited quantity: 1 L  
 Excepted quantity: E0  
 EmS: F-H, S-Q

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number or ID number:** UN 1802  
**14.2. UN proper shipping name:** PERCHLORIC ACID  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8+5.1



Special Provisions: A1  
 Limited quantity Passenger: Forbidden  
 Passenger LQ: Forbidden  
 Excepted quantity: E0  
 IATA-packing instructions - Passenger: Forbidden  
 IATA-max. quantity - Passenger: Forbidden  
 IATA-packing instructions - Cargo: 855  
 IATA-max. quantity - Cargo: 30 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**



**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 9 of 10

Refer to section 6-8

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 75

Information according to 2012/18/EU Not subject to 2012/18/EU (SEVESO III)  
(SEVESO III):**Additional information**

The preparation is dangerous in the sense of Directive 1999/45/EC.

This preparation is hazardous in the sense of regulation (EC) No 1272/2008 [GHS].

Not subject to regulation 96/82/EC.

REACH 1907/2006 Appendix XVII, No (mixture): 3

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information****Changes**

Rev. 2,0; 14.01.23, Individual safety data sheet based on 12877\_collect

Rev. 2,1; 03.03.23, Correction chapter: 14

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations

Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

OSHA: Occupational Safety and Health Administration

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOEL: No observed effect level

NOAEL: No observed adverse effect level

LOAEL: Lowest observed adverse effect level

NOAEC: No observed adverse effect level

LOAEC: Lowest observed adverse effect concentration

DNEL: Derived No Effect Level

PNEC: predicted no effect concentration

TSCA: Toxic Substances Control Act

IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

NTP: National Toxicology Program

**Safety Data Sheet**

according to UK REACH Regulation

**Perchloric Acid 0.336 mol/l**

Revision date: 03.03.2023

Product code: 14047.xxxxx

Page 10 of 10

SARA: Superfund Amendments and Reauthorization Act  
 GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)  
 PBT: Persistent bioaccumulative toxic  
 SVHC: substance of very high concern  
 CLP: Classification, labelling and Packaging  
 REACH: Registration, Evaluation and Authorization of Chemicals  
 GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
 UN: United Nations  
 CAS: Chemical Abstracts Service  
 DNEL: Derived No Effect Level  
 DMEL: Derived Minimal Effect Level  
 PNEC: Predicted No Effect Concentration  
 ATE: Acute toxicity estimate  
 LL50: Lethal loading, 50%  
 EL50: Effect loading, 50%  
 EC50: Effective Concentration 50%  
 ErC50: Effective Concentration 50%, growth rate  
 NOEC: No Observed Effect Concentration  
 BCF: Bio-concentration factor  
 PBT: persistent, bioaccumulative, toxic  
 vPvB: very persistent, very bioaccumulative  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 RID: Regulations concerning the international carriage of dangerous goods by rail  
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
 (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation  
 intérieures)  
 EmS: Emergency Schedules  
 MFAG: Medical First Aid Guide  
 MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
 IBC: Intermediate Bulk Container  
 For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety  
 assessment, chapter R.20 (Table of terms and abbreviations).

**Classification for mixtures and used evaluation method according to GB CLP Regulation**

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method

**Relevant H and EUH statements (number and full text)**

H271	May cause fire or explosion; strong oxidiser.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. 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.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*