

Safety data sheet
according to 1907/2006/EC, Article 31

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

· **1.1 Product identifier**

· **Trade name:** Perchloric Acid 0.1 mol/l (0.1N) in acetic acid

· **Article number:** 1046

· **Application of the substance / the mixture**

Chemical analytics
Chemical production
Laboratory chemicals

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

· **Manufacturer/Supplier:**

PANREAC QUIMICA S.L.U.
C/Garraf 2
Polígono Pla de la Bruguera
E-08211 Castellar del Vallès (Barcelona)

Tel. (+34) 937 489 400

Fax. (+34) 937 489 401

e-mail: product.safety@itwreagents.com

· **Further information obtainable from:** email: product.safety@panreac.com

· **1.4 Emergency telephone number:**

Single telephone number for emergency calls: 112 (EU)
Tel.: (+34) 937 489 499

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

Flam. Liq. 3 H226 Flammable liquid and vapour.
Acute Tox. 4 H312 Harmful in contact with skin.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

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GB

Trade name: **Perchloric Acid 0.1 mol/l (0.1N) in acetic acid**

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· **Hazard pictograms**



GHS02 GHS05 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**

Acetic acid
perchloric acid

· **Hazard statements**

H226 Flammable liquid and vapour.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.

· **Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P321 Specific treatment (see on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**

- **Description:** Mixture of substances listed below with nonhazardous additions.

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Trade name: Perchloric Acid 0.1 mol/l (0.1N) in acetic acid

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· Dangerous components:

CAS: 64-19-7 EINECS: 200-580-7 Reg.nr.: 01-2119475328-30-XXXX	Acetic acid Flam. Liq. 3, H226; Skin Corr. 1A, H314 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 90% Skin Corr. 1B; H314: 25 % ≤ C < 90 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 %	≥90-<100%
EINECS: 231-512-4	perchloric acid Flam. Liq. 3, H226; Ox. Liq. 1, H271; Skin Corr. 1A, H314; Acute Tox. 4, H302 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 50% Skin Corr. 1B; H314: 10 % ≤ C < 50 % Skin Irrit. 2; H315: 1 % ≤ C < 10 % Eye Irrit. 2; H319: 1 % ≤ C < 10 % Ox. Liq. 1; H271: C ≥ 50.0001 % Ox. Liq. 2; H272: 50 % ≤ C < 50.0001 %	1%

· Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information:

Personal protection for the First Aider.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Involve doctor immediately.

· After inhalation:

Take affected persons into fresh air and keep quiet.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact:

Call a doctor immediately.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

Immediately wash with water and soap and rinse thoroughly.

Immediately remove any clothing soiled by the product.

· After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

· After swallowing:

make victim drink water (maximum of 2 drinking glasses)

Call a doctor immediately.

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

No further relevant information available.

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

No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

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Forms explosive mixtures with air at ambient temperatures.
Vapours are heavier than air and may spread along floors.

Beware of backfiring.

Forms explosive mixtures with air on intense heating.

· **5.3 Advice for firefighters**

· **Protective equipment:** Wear self-contained respiratory protective device.

· **Additional information**

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Contain escaping vapours with water.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Avoid substance contact.

Do not inhale steams/aerosols.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

Clean up affected area.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

· **Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** Provide acid-resistant floor.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:**

Keep container tightly sealed.

Protect from heat and direct sunlight.

Open receptacle only under localised extractor facilities.

Store under lock and key and with access restricted to technical experts or their assistants only.

· **Recommended storage temperature:** Room Temperature

· **Storage class:** 3

· **7.3 Specific end use(s)** No further relevant information available.

GB

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Trade name: **Perchloric Acid 0.1 mol/l (0.1N) in acetic acid**

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SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

64-19-7 Acetic acid

WEL	Short-term value: 50 mg/m ³ , 20 ppm Long-term value: 25 mg/m ³ , 10 ppm
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· DNELs

64-19-7 Acetic acid

Dermal	Acute - local effects, worker	25 mg/kg
Inhalative	Long-term - local effects, worker	25 mg/m ³
	Acute - local effects, general population	25 mg/m ³
	Long-term - local effects, general population	25 mg/m ³

· PNECs

64-19-7 Acetic acid

Aquatic compartment - freshwater	3.058 mg/L
Aquatic compartment - marine water	0.306 mg/L
Aquatic compartment - water, intermittent releases	30.58 mg/L
Aquatic compartment - sediment in freshwater	11.36 mg/kg
Aquatic compartment - sediment in marine water	1.136 mg/kg
Sewage treatment plant	85 mg/L
Ground	0.47 mg/kg

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

Filter ABEK

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Use suitable respiratory protective device only when aerosol or mist is formed.

· **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation


· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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Trade name: Perchloric Acid 0.1 mol/l (0.1N) in acetic acid

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- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact gloves made of the following materials are suitable:**
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.7 mm
Value for the permeation: Level ≥ 480 min min
- **As protection from splashes gloves made of the following materials are suitable:**
Natural rubber, NR
Recommended thickness of the material: ≥ 0.6 mm
Value for the permeation: Level ≥ 30 min min
- **Eye/face protection**
 Gauze goggles
- **Body protection:**
Use protective suit.
Acid resistant protective clothing
Flame retardant antistatic protective clothing

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Physical state** Fluid
- **Colour:** Colourless
- **Odour:** Pungent
- **Odour threshold:** Not determined.
- **Melting point/freezing point:** Undetermined.
- **Boiling point or initial boiling point and boiling range** Undetermined.
- **Flammability** Not applicable.
Flammable.
- **Lower and upper explosion limit**
- **Lower:** 4 Vol %
- **Upper:** 16 Vol %
- **Flash point:** 39 °C (64-19-7 Acetic acid)
- **Auto-ignition temperature:** ~485 °C
- **Decomposition temperature:** Not determined.
- **pH at 20 °C** ~0.1
- **Viscosity:**
- **Kinematic viscosity** Not determined.
- **Dynamic:** Not determined.
- **Solubility**
- **water:** Not determined.
- **Partition coefficient n-octanol/water (log value)** Not determined.
- **Vapour pressure at 20 °C:** 16 hPa
- **Density and/or relative density**
- **Density at 20 °C:** 1.06 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.

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Trade name: Perchloric Acid 0.1 mol/l (0.1N) in acetic acid

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- **9.2 Other information**
- **Appearance:**
- **Form:** Liquid
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

- **Solvent content:**
- **Organic solvents:** 99.0 %
- **VOC (EC)** 99.00 %
- **Solids content:** 0.0 %
- **Change in condition**
- **Evaporation rate** Not determined.

- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Flammable liquid and vapour.
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Heating.
- **10.5 Incompatible materials:**
potassium permanganate
peroxides
Danger of explosion.
- **10.6 Hazardous decomposition products:** Ethanoic acid

GB

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SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful in contact with skin.
- **LD/LC50 values relevant for classification:**
 Quantitative data on the toxicological effect of this product are not available.

Components	Type	Value	Species
ATE (Acute Toxicity Estimates)			
Oral	LD50	110,000 mg/kg	(rat)
Dermal	LD50	1,141 mg/kg	(rabbit)

64-19-7 Acetic acid

Oral	LD50	3,310 mg/kg	(rat)
Inhalative	LC50/4 h	5,620 mg/l	(mouse)

- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation** Causes serious eye damage.
- **After inhalation:** Strong caustic effect on skin and mucous membranes.
- **11.2 Information on other hazards**

Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.

Type of test	Effective concentration	Method	Assessment
64-19-7 Acetic acid			
EC50/72 h	>300.8 mg/l	(Algae)	
EC50/24 h	>300.8 mg/l	(daphnia magna)	
LC50/96 h	>300.8 mg/l	(fish)	
NOEC/72 h	>300.8 mg/l	(Algae)	

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.

12.5 Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Additional ecological information:

General notes:

Do not allow product to reach ground water, water course or sewage system.

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.







Trade name: Perchloric Acid 0.1 mol/l (0.1N) in acetic acid

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SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
 Chemicals must be disposed of in compliance with the respective national regulations.
 Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:**
 Disposal must be made according to official regulations.
 Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN2920
· 14.2 UN proper shipping name · ADR, IMDG · IATA	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (ACETIC ACID, GLACIAL, PERCHLORIC ACID) CORROSIVE LIQUID, FLAMMABLE, N.O.S. (ACETIC ACID, GLACIAL, CHLORODIFLUOROMETHANE AND CHLOROPENTAFLUOROETHANE MIXTURE (REFRIGERANT GAS R 502))
· 14.3 Transport hazard class(es) · ADR	
 	
· Class · Label	8 (CF1) Corrosive substances. 8+3
· IMDG	
 	
· Class · Label	8 Corrosive substances. 8/3
· IATA	
 	
· Class · Label	8 Corrosive substances. 8 (3)
· 14.4 Packing group · ADR, IMDG, IATA	II

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Trade name: Perchloric Acid 0.1 mol/l (0.1N) in acetic acid

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· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user	Warning: Corrosive substances.
· Hazard identification number (Kemler code):	83
· EMS Number:	F-E,S-C
· Stowage Category	E
· Stowage Code	SW1 Protected from sources of heat. SW2 Clear of living quarters.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S. (ACETIC ACID, GLACIAL, PERCHLORIC ACID), 8 (3), II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category P5c** FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

- H226 Flammable liquid and vapour.
- H271 May cause fire or explosion; strong oxidiser.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

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ICAO: International Civil Aviation Organisation
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Flammable liquids – Category 3
Ox. Liq. 1: Oxidizing liquids – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – Category 1

- * **Data compared to the previous version altered.**

Annex: Exposure scenario

- **Short title of the exposure scenario** Formulation and packing/repacking of substances and mixtures
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** The substance is main component.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** No special measures required.
- **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
Avoid contact with the skin.
- **Other operational conditions affecting consumer exposure** No special measures required.
- **Other operational conditions affecting consumer exposure during the use of the product**
Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures** No special measures required.
- **Technical protective measures** Ensure that suitable extractors are available on processing machines
- **Personal protective measures**
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Tightly sealed goggles
Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Measures for consumer protection** Ensure adequate labelling.

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Trade name: Perchloric Acid 0.1 mol/l (0.1N) in acetic acid

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- **Environmental protection measures**
- **Water**
Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.

GB