

# SAFETY DATA SHEET



according to Regulation (EC) No 1907/2006 (REACH) as amended

## Perchloric acid 65-71%

Creation date	08th November 2018	Version	3.0
Revision date	06th May 2022		

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

#### 1.1. Product identifier

Substance / mixture	Perchloric acid 65-71%
Number	substance
Chemical name	SAC11002, UAc11002, SAC1000
CAS number	perchloric acid
Index number	7601-90-3
EC (EINECS) number	017-006-00-4
	231-512-4

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against Substance's intended use

For professional use only. Laboratory chemical substances.

##### The use descriptors

SU 24	Scientific research and development
PC 21	Laboratory chemicals
PROC 15	Use as laboratory reagent

##### Substance uses advised against

The product should not be used in ways other than those referred in Section 1.

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

##### Supplier

Name or trade name	Analytika, spol. s r.o.
Address	Ke Klíčovu 816/2a, Praha 9 - Vysočany, 190 00
	Czech Republic
Identification number (CRN)	14891883
VAT Reg No	CZ14891883
Phone	+420 286 589 616
E-mail	msds@analytika.net
Web address	www.analytika.net

##### Competent person responsible for the safety data sheet

Name	Analytika, spol. s r.o.
E-mail	msds@analytika.net

#### 1.4. Emergency telephone number

European emergency number: 112

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is classified as dangerous.

Ox. Liq. 1, H271  
Met. Corr. 1, H290  
Acute Tox. 4, H302  
Skin Corr. 1A, H314  
STOT RE 2, H373

Full text of all classifications and hazard statements is given in the section 16.

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### Most serious adverse physico-chemical effects

May cause fire or explosion; strong oxidiser. May be corrosive to metals.

### Most serious adverse effects on human health and the environment

Causes severe skin burns and eye damage. May cause damage to organs through prolonged or repeated exposure. Harmful if swallowed.

## 2.2. Label elements

### Hazard pictogram



### Signal word

Danger

### Dangerous substance

perchloric acid  
(Index: 017-006-00-4; CAS: 7601-90-3)

### Hazard statements

H271	May cause fire or explosion; strong oxidiser.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H373	May cause damage to organs through prolonged or repeated exposure.

### Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/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 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 doctor.

## 2.3. Other hazards

Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

##### Chemical characterization

The substance specified below.

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 017-006-00-4 CAS: 7601-90-3 EC: 231-512-4	<b>substance main component</b> perchloric acid	65-71	Ox. Liq. 1, H271 Met. Corr. 1, H290 Acute Tox. 4, H302 Skin Corr. 1A, H314 STOT RE 2, H373 Specific concentration limit: Eye Irrit. 2, H319: 1 % ≤ C < 10 % Ox. Liq. 2, H272: C ≤ 50 % Skin Irrit. 2, H315: 1 % ≤ C < 10 % Skin Corr. 1A, H314: C ≥ 50 % Skin Corr. 1B, H314: 10 % ≤ C < 50 % Ox. Liq. 1, H271: C > 50 %	1, 2

#### Notes

- Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ... %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.
  - The use of the substance is restricted by Annex XVII of REACH Regulation
- Full text of all classifications and hazard statements is given in the section 16.

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

##### **If inhaled**

Take care of your own safety, do not let the affected person walk! Terminate the exposure immediately; move the affected person to fresh air. Beware of the contaminated clothes. Depending on the situation, call the medical rescue service and ensure medical treatment considering the frequent need of further observation for at least 24 hours.

##### **If on skin**

Remove contaminated clothes. Take off any rings, watches, bracelets before or during washing if worn in the contaminated areas of the skin. Depending on the situation, call the medical rescue service and always ensure medical treatment. Rinse contaminated areas with a flow of water, lukewarm at best, for 10-30 minutes; do not use any brush, soap or neutralizers. Rinse skin with water or shower. Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Rinse cautiously with water for several minutes.

##### **If in eyes**

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

##### **If swallowed**

DO NOT INDUCE VOMITING - there is danger of further damage to the gastrointestinal tract!!! Danger of esophageal and gastric perforation! RINSE THE MOUTH WITH WATER IMMEDIATELY AND LET THE PERSON DRINK 2-5 dl of cold water to reduce the heating effect of the corrosive substance. Consuming larger amounts of liquid is not advisable as it may induce vomiting and potential inhaling of the corrosive substances in the lungs. The affected person must not be forced to drink, particularly if already feeling pain in the mouth or throat. In this case let the affected person only rinse the mouth with water. DO NOT PROVIDE ACTIVATED CARBON! Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible.

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

#### If inhaled

Inhaling vapours can cause corrosion of the breathing system. Cough, headache.

#### If on skin

Causes severe skin burns.

#### If in eyes

Causes serious eye damage.

#### If swallowed

Corrosion of the digestion system can occur.

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

Symptomatic treatment.

#### More information

Other relevant information is not available.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

#### Unsuitable extinguishing media

Water - full jet.

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

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

### 5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water. Fight fire remotely due to the risk of explosion. Evacuate area.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Provide sufficient ventilation. The substance is oxidizing. May cause fire or explosion; strong oxidiser. May be corrosive to metals. Remove all ignition sources. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Do not inhale mist/vapours/spray. Prevent contact with skin and eyes.

### 6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

### 6.3. Methods and material for containment and cleaning up

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per the Section 13. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water. Do not use solvents. Absorb spillage to prevent material damage.

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### 6.4. Reference to other sections

See the Section 7, 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Prevent formation of gases and vapours in concentrations exceeding the occupational exposure limits. The product should be used only in the areas where it is not in contact with open fire and other ignition sources. Use of antistatic clothes and footwear is recommended. Do not inhale mist/vapours/spray. Prevent contact with skin and eyes. No smoking. Do not eat, drink or smoke when using this product. Wash hands and exposed parts of the body thoroughly after handling. Take any precaution to avoid mixing with combustibles. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight. Store locked up. Keep only in original packaging.

Storage class

8B - Non-combustible corrosive substances

### 7.3. Specific end use(s)

not available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### DNEL

perchloric acid

Workers / consumers	Route of exposure	Value	Effect	Determining method	Source
Consumers	Oral	0.0167 mg/kg bw/day	Systemic chronic effects		
Consumers	Inhalation	0.058 mg/m <sup>3</sup>	Systemic chronic effects		

### 8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. If exposure limits cannot be observed in this mode, suitable protection of airways must be used. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

#### Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

#### Skin protection

Hand protection: Protective gloves resistant to the product. When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly. Wear fire resistant or flame retardant clothing.

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### Respiratory protection

Use a mask with filter when the exposition limits of the substances are exceeded or at the place with insufficient ventilation.

### Thermal hazard

Not available.

### Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	data not available
Melting point/freezing point	-18 °C
Boiling point or initial boiling point and boiling range	198 °C
Flammability	data not available
Lower and upper explosion limit	data not available
Flash point	113 °C
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	1 (undiluted)
Kinematic viscosity	data not available
Solubility in water	soluble
Partition coefficient n-octanol/water (log value)	data not available
Vapour pressure	data not available
Density and/or relative density	
Density	1,67 g/cm <sup>3</sup> at 20 °C
data not available	

### 9.2. Other information

none

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The substance is oxidizing.

### 10.2. Chemical stability

The product is stable under normal conditions.

### 10.3. Possibility of hazardous reactions

The product is stable under normal conditions.

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### 10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

### 10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents. Thereby a dangerous exothermic reaction will be prevented. May be corrosive to metals.

### 10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide, heavy smoke, nitrogen oxides, chlorine and chlorine oxides are formed at high temperature and in fire.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

No toxicological data is available for the substance.

#### Acute toxicity

Harmful if swallowed.

perchloric acid

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex
Oral	LD <sub>50</sub>		1100 mg/kg		Rat (Rattus norvegicus)	
Skin	LD <sub>50</sub>		250 mg/kg		Mouse	
Oral	LD <sub>50</sub>	OECD 423	200-2000 mg/kg bw		Rat (Rattus norvegicus)	F/M

#### Skin corrosion/irritation

Causes severe skin burns and eye damage.

#### Serious eye damage/irritation

Causes severe skin burns and eye damage.

#### Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

#### Germ cell mutagenicity

Based on available data the classification criteria are not met.

#### Carcinogenicity

Based on available data the classification criteria are not met.

#### Reproductive toxicity

Based on available data the classification criteria are not met.

#### Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

#### Toxicity for specific target organ - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

#### Aspiration hazard

Based on available data the classification criteria are not met.

### 11.2. Information on other hazards

not available



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### SECTION 12: Ecological information

#### 12.1. Toxicity

##### Acute toxicity

perchloric acid

Parameter	Value	Time of exposure	Species	Environment
EC <sub>50</sub>	>100 mg/l	48 hour	Daphnia (Daphnia magna)	

#### 12.2. Persistence and degradability

Data not available.

#### 12.3. Bioaccumulative potential

Data not available.

#### 12.4. Mobility in soil

Data not available.

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

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

#### 12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100.

#### 12.7. Other adverse effects

Data not available.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

##### Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

##### Waste type code

20 01 14 Acids \*

##### Packaging waste type code

15 01 10 packaging containing residues of or contaminated by hazardous substances \*

(\*) - Hazardous waste according to Directive 2008/98/EC on hazardous waste

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### SECTION 14: Transport information

#### 14.1. UN number or ID number

UN 1873

#### 14.2. UN proper shipping name

PERCHLORIC ACID

#### 14.3. Transport hazard class(es)

5.1 Oxidizing substances

#### 14.4. Packing group

I - substances presenting high danger

#### 14.5. Environmental hazards

not relevant

#### 14.6. Special precautions for user

Reference in the Sections 4 to 8.

#### 14.7. Maritime transport in bulk according to IMO instruments

not relevant

#### Additional information

Hazard identification No.

558

UN number

1873

Classification code

OC1

Safety signs

5.1+8



#### Air transport - ICAO/IATA

Packaging instructions passenger

Forbidden

Cargo packaging instructions

553

#### Marine transport - IMDG

EmS (emergency plan)

F-A, S-Q

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### SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16th 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, as amended.

##### National regulations (Germany)

WGK Water hazard class: WGK 1 - slightly hazardous to water

#### 15.2. Chemical safety assessment

not available

### SECTION 16: Other information

#### A list of standard risk phrases used in the safety data sheet

H271	May cause fire or explosion; strong oxidiser.
H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

#### Guidelines for safe handling used in the safety data sheet

P260	Do not breathe vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/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 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 doctor.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

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### Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
DNEL	Derived no-effect level
EC <sub>50</sub>	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
ES	Identification code for each substance listed in EINECS
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LD <sub>50</sub>	Lethal dose of a substance in which it can be expected death of 50% of the population
log K <sub>ow</sub>	Octanol-water partition coefficient
MARPOL	International Convention for the Prevention of Pollution from Ships
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation
Met. Corr.	Corrosive to metals
Ox. Liq.	Oxidising liquid
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation

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STOT RE Specific target organ toxicity - repeated exposure

### Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

### Recommended restrictions of use

not available

### Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

### The changes (which information has been added, deleted or modified)

The version 3.0 replaces the SDS version from 9th November 2020. Changes were made in sections 1, 2, 12, 13, 15 and 16.

### Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.