

# safety data sheet

Safe Work Australia - Code of Practice



## Benedict's reagent

article number: **0010**  
Version: **GHS 1.0 en**

date of compilation: 2017-01-09

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

### 1.1 Product identifier

Identification of the substance	<b>Benedict's reagent</b>
Article number	0010
Registration number (REACH)	not relevant (mixture)

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

<b>Identified uses:</b>	laboratory chemical laboratory and analytical use
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### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:** +49 (0) 721 - 56 06 0

**Telefax:** +49 (0) 721 - 56 06 149

**e-mail:** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

**Website:** [www.carlroth.de](http://www.carlroth.de)

Competent person responsible for the safety data sheet : Department Health, Safety and Environment

**e-mail (competent person)** : [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

### 1.4 Emergency telephone number

Emergency information service	<b>Poison Centre Munich: +49/(0)89 19240</b>
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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008 (CLP)

This mixture does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC.

### 2.2 Label elements

#### Labelling according to Regulation (EC) No 1272/2008 (CLP)

not required

**Signal word** not required

### 2.3 Other hazards

There is no additional information.

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### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

##### Description of the mixture

This mixture does not meet the criteria for classification.

Name of substance	Identifier	wt %	Classification acc. to 1272/2008/EC	Pictograms	Specific Conc. Limits	M-Factors
Sodium carbonate	CAS No 497-19-8  EC No 207-838-8  Index No 011-005-00-2  REACH Reg. No 01- 2119485498- 19-xxxx	5 - < 10	Eye Irrit. 2 / H319			
Copper sulphate pentahydrate	CAS No 7758-99-8  EC No 231-847-6  Index No 029-023-00-4  REACH Reg. No 01- 2119520566- 40	1 - < 5	Acute Tox. 4 / H302 Eye Dam. 1 / H318 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410			M-factor (acute) = 10.0 M-factor (chronic) = 10.0

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures



##### General notes

Take off contaminated clothing.

##### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

##### Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

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### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

### Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

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

Irritant effects

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

none

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings  
water spray, foam, dry extinguishing powder, carbon dioxide (CO<sub>2</sub>)

#### Unsuitable extinguishing media

water jet

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

Non-combustible.

#### Hazardous combustion products

In case of fire may be liberated: May produce toxic fumes of carbon monoxide if burning.

### 5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

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

#### For non-emergency personnel

No special measures are necessary.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water.

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

#### Advices on how to contain a spill

Covering of drains.

#### Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

#### Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8.  
Incompatible materials: see section 10. Disposal considerations: see section 13.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

No special measures are necessary.

#### Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.

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

Keep container tightly closed.

#### Incompatible substances or mixtures

Observe hints for combined storage.

#### Consideration of other advice

##### • Ventilation requirements

Use local and general ventilation.

##### • Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C.

#### 7.3 Specific end use(s)

No information available.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### National limit values

##### Occupational exposure limit values (Workplace Exposure Limits)

Data are not available.

##### Relevant DNELs/DMELs/PNECs and other threshold levels

##### • relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Sodium carbonate	497-19-8	DNEL	10 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects

#### 8.2 Exposure controls

##### Individual protection measures (personal protective equipment)



##### Eye/face protection

Use safety goggle with side protection.

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### Skin protection

- **hand protection**

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374.

- **type of material**

NBR (Nitrile rubber)

- **material thickness**

>0,11 mm

- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

### Respiratory protection

Respiratory protection necessary at: Aerosol or mist formation.

### Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	liquid (fluid)
Colour	blue
Odour	this information is not available
Odour threshold	No data available

#### Other physical and chemical parameters

pH (value)	This information is not available.
Melting point/freezing point	~ 0 °C
Initial boiling point and boiling range	~ 100 °C at 1,013 hPa
Flash point	not determined
Evaporation rate	no data available
Flammability (solid, gas)	not relevant (fluid)
<u>Explosive limits</u>	
• lower explosion limit (LEL)	this information is not available
• upper explosion limit (UEL)	this information is not available
Explosion limits of dust clouds	not relevant
Vapour pressure	This information is not available.
Density	This information is not available.
Vapour density	This information is not available.
Bulk density	Not applicable
Relative density	Information on this property is not available.

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### Solubility(ies)

Water solubility no data available

### Partition coefficient

n-octanol/water (log KOW) This information is not available.

Auto-ignition temperature Information on this property is not available.

Decomposition temperature no data available

Viscosity not determined

Explosive properties Shall not be classified as explosive

Oxidising properties none

## 9.2 Other information

There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

Violent reaction with: Strong oxidiser

### 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

### 10.5 Incompatible materials

There is no additional information.

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Shall not be classified as acutely toxic.

#### • Acute toxicity of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Sodium carbonate	497-19-8	inhalation: dust/mist	1.5 mg/l/4h

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

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### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

### Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

#### • Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

#### • Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

### Symptoms related to the physical, chemical and toxicological characteristics

#### • If swallowed

data are not available

#### • If in eyes

Irritating to eyes

#### • If inhaled

data are not available

#### • If on skin

data are not available

### Other information

None

## SECTION 12: Ecological information

### 12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

#### Aquatic toxicity (acute)

##### Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Sodium carbonate	497-19-8	LC50	300 mg/l	fish	96 h
Sodium carbonate	497-19-8	EC50	227 mg/l	aquatic invertebrates	48 h

#### Aquatic toxicity (chronic)

##### Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Sodium carbonate	497-19-8	LC50	385 mg/l	fish	24 h
Sodium carbonate	497-19-8	EC50	403 mg/l	aquatic invertebrates	24 h

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### 12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.3 Bioaccumulative potential

Data are not available.

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

## SECTION 14: Transport information

14.1	UN number	3082
14.2	UN proper shipping name	<b>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.</b>
	Hazardous ingredients	Copper sulphate pentahydrate
14.3	Transport hazard class(es)	
	Class	9 (miscellaneous dangerous substances and articles) (environmentally hazardous)
14.4	Packing group	III (substance presenting low danger)
14.5	Environmental hazards	hazardous to the aquatic environment (Copper sulphate pentahydrate)
14.6	Special precautions for user	
	Provisions for dangerous goods (ADR) should be complied within the premises.	



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### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

### 14.8 Information for each of the UN Model Regulations

#### • Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Particulars in the transport document	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (contains: Copper sulphate pentahydrate), 9, III, (-)
Class	9
Classification code	M6
Packing group	III
Danger label(s)	9 + "fish and tree"
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	274, 335, 375, 601
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
Transport category (TC)	3
Tunnel restriction code (TRC)	-
Hazard identification No	90
<b>Emergency Action Code</b>	3Z

#### • International Maritime Dangerous Goods Code (IMDG)

UN number	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Particulars in the shipper's declaration	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (contains: Copper sulphate pentahydrate), 9, III
Class	9
Marine pollutant	yes (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	9 + "fish and tree"

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Special provisions (SP)	274, 335, 969
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-A, S-F
Stowage category	A
<b>• International Civil Aviation Organization (ICAO-IATA/DGR)</b>	
UN number	3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Particulars in the shipper's declaration	UN3082, Environmentally hazardous substance, liquid, n.o.s., (contains: Copper sulphate pentahydrate), 9, III
Class	9
Environmental hazards	yes (hazardous to the aquatic environment)
Packing group	III
	9 + "fish and tree"



Special provisions (SP)	A97, A158, A197, 274
Excepted quantities (EQ)	E1
Limited quantities (LQ)	30 kg

## SECTION 15: Regulatory information

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

#### Relevant provisions of the European Union (EU)

- **Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)**  
None of the ingredients are listed.
- **Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)**  
None of the ingredients are listed.

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- **Regulation 850/2004/EC on persistent organic pollutants (POP)**

None of the ingredients are listed.

- **Restrictions according to REACH, Annex XVII**

None of the ingredients are listed.

- **List of substances subject to authorisation (REACH, Annex XIV)**

None of the ingredients are listed.

- **Seveso Directive**

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
E2	environmental hazards (hazardous to the aquatic environment, cat. 2)	200                      500	57)

**Notation**

57) Hazardous to the Aquatic Environment in category Chronic 2

- **Limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products (2004/42/EC, Deco-Paint Directive)**

VOC content                                      0 %

- **Directive on industrial emissions (VOCs, 2010/75/EU)**

VOC content                                      0 %

- **Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II**

None of the ingredients are listed.

- **Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)**

None of the ingredients are listed.

- **Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)**

None of the ingredients are listed.

### 15.2 Chemical Safety Assessment

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

## SECTION 16: Other information

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	hazardous to the aquatic environment - acute hazard
Aquatic Chronic	hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate

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Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Eye Dam.	seriously damaging to the eye
Eye Irrit.	irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
M-factor	means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
VOC	Volatile Organic Compounds
vPvB	very Persistent and very Bioaccumulative

### Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

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### List of relevant phrases (code and full text as stated in chapter 2 and 3)

not relevant.

Code	Text
H302	harmful if swallowed
H318	causes serious eye damage
H319	causes serious eye irritation
H400	very toxic to aquatic life
H410	very toxic to aquatic life with long lasting effects

### Disclaimer

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.