

# Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 28.05.2015

Version: 1.0

Print date: 31.05.2015

## SECTION 1: Identification

### Product identifier

Trade name/designation:	Sulfuric acid 4N
Product No.:	BDH7484
Substance name:	Sulphuric acid (1.69 - < 3.01 mol/l) in aqueous solution
CAS No.:	7664-93-9
INDEX No.:	016-020-00-8
REACH registration No.:	Not yet communicated down the supply chain.
Other means of identification:	

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

Relevant identified uses:	General chemical reagent
---------------------------	--------------------------

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

#### **VWR International, LLC**

Street	100 Matsonford Road
Postal code/city	Radnor, PA 19087-8660
Telephone	610-386-1700
E-mail	www.vwr.com

#### **Emergency telephone**

Telephone	+1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA)
-----------	--

---

#### **VWR International Co.**

Street	2360 Argentia Road
Postal code/city	Mississauga, ON, L5N 5Z7
Telephone	800-932-5000
E-mail	www.vwr.com

#### **Emergency telephone**

Telephone	+1-613-996-6666 (Canutec, 24 hrs/day, 7 days/week, Canada)
-----------	--

## SECTION 2: Hazards identification

### Classification of the substance or mixture

#### Classification according GHS

Hazard classes and hazard categories	Hazard statements
Skin corrosion, category 1A	H314
Substance or mixture corrosive to metals, category 1	H290

#### Classification according to Directive 67/548/EEC or 1999/45/EC

C	Corrosive	R35
---	-----------	-----

### Label elements

#### Labelling according GHS

Hazard pictograms



Signal word: Danger

Hazard statements	
H314	Causes severe skin burns and eye damage.
H290	May be corrosive to metals.

Precautionary statements	
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P310	IF exposed or concerned: Immediately call a POISON CENTER/doctor/...

#### Labelling (67/548/EEC or 1999/45/EC)

Hazard symbols

C

R-phrases	
R35	Causes severe burns.

S-phrases	
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60	This material and its container must be disposed of as hazardous waste.

Other hazards

SVHC No

### SECTION 3: Composition / information on ingredients

#### Hazardous ingredients Classification according to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Substance name	Concentration	Product identifier	Hazard classes and hazard categories
Sulphuric acid	15-25%	CAS No.: EC No.: REACH No.: Not yet communicated down the supply chain.	Skin corrosion, category 1A - H314 Hazardous to the aquatic environment, acute, category 1 - H400

#### Hazardous ingredients Classification according to 67/548/EEC

Substance name	Concentration	Product identifier	Hazard classes and hazard categories
Sulphuric acid	15-25%	CAS No.: EC No.: REACH No.: Not yet communicated down the supply chain.	C, Corrosive, R35

### SECTION 4: First aid measures

#### General information

IF exposed: Immediately call a POISON CENTRE/doctor/.... If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

#### After inhalation

Immediately call a POISON CENTRE/doctor/.... Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

#### In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

#### After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

#### In case of ingestion

Immediately call a POISON CENTRE/doctor/.... Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

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

no data available

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

no data available

### Self-protection of the first aider

First aider: Pay attention to self-protection!

### Information to physician

no data available

## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

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

#### Extinguishing media which must not be used for safety reasons

no restriction

### Special hazards arising from the substance or mixture

In case of fire may be liberated: Sulphur oxides

### Advice for firefighters

DO NOT fight fire when fire reaches explosives. In case of fire: Wear self-contained breathing apparatus.

### Additional information

Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen. Use water spray jet to protect personnel and to cool endangered containers.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Special danger of slipping by leaking/spilling product. In case of major fire and large quantities: Remove persons to safety. Wear a self-contained breathing apparatus and chemical protective clothing.

### Environmental precautions

Do not allow to enter into surface water or drains.

### Methods and material for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Clean contaminated objects and areas thoroughly observing environmental regulations. Suitable material for diluting or neutralizing: Lime Soda Sand

### Additional information

Clear spills immediately.

## SECTION 7: Handling and storage

### Precautions for safe handling

Avoid: Inhalation Avoid contact with skin and eyes. Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means. Protect from moisture.

### Conditions for safe storage, including any incompatibilities

storage temperature: 15-25 °C

Storage class: 8B

Keep container tightly closed in a cool, well-ventilated place.

## Specific end use(s)

no data available

## SECTION 8: Exposure controls/personal protection

### Control parameters

Ingredient (Designation)	Regulatory information	Country	Limit value type (country of origin)	Limit value	Remark
Sulphuric acid	Gestis	CA	LTV	1 mg/m <sup>3</sup>	
Sulphuric acid	Gestis	CA	STV	3 mg/m <sup>3</sup>	
Sulphuric acid	OSHA	US	LTV	1 mg/m <sup>3</sup>	
Sulphuric acid	NIOSH	US	LTV	1 mg/m <sup>3</sup>	

### Exposure controls

#### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

#### Personal protection equipment

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

##### *Eye/face protection*

Eye glasses with side protection DIN-/EN-Norms: DIN EN 166

Recommendation: VWR 111-0432

##### *Skin protection*

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. Recommended glove articles DIN-/EN-Norms: DIN EN 374 In the case of wanting to use the gloves again, clean them before taking off and air them well.

##### By short-term hand contact

Suitable material: CR (polychloroprene, chloroprene rubber)  
 Thickness of the glove material: 0,75 mm  
 Breakthrough time (maximum wearing time): 120-240 min  
 Recommended glove articles: VWR 112-2308

##### By long-term hand contact

Suitable material: Butyl caoutchouc (butyl rubber)/FKM (fluoro rubber)  
 Thickness of the glove material: 0,70 mm  
 Breakthrough time (maximum wearing time): > 480 min  
 Recommended glove articles: VWR 112-3819

##### *Respiratory protection*

Respiratory protection necessary at: aerosol or mist formation

Suitable respiratory protection apparatus: Full-/half-/quarter-face masks (DIN EN 136/140)  
 Recommendation: VWR 111-0206  
 Suitable material: A2B2E2K2P3  
 Recommendation: VWR 111-0059

##### *Additional information*

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

*Environmental exposure controls*  
no data available

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

(a) Appearance	
Physical state:	liquid
Colour:	colourless
(b) Odour:	no data available
(c) Odour threshold:	no data available

### Safety relevant basic data

(d) pH:	<1 (20 °C)
(e) Melting point/freezing point:	no data available
(f) Initial boiling point and boiling range:	no data available
(g) Flash point:	no data available
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	not applicable
(j) Upper/lower flammability or explosive limits	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
(k) Vapour pressure:	no data available
(l) Vapour density:	no data available
(m) Relative density:	1.146 g/cm <sup>3</sup> (20 °C)
(n) Solubility(ies)	
at 20 °C:	no data available
Soluble (g/L) in:	no data available
(o) Partition coefficient: n-octanol/water:	no data available
(p) Auto-ignition temperature:	no data available
(q) Decomposition temperature:	no data available
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
(s) Explosive properties:	not applicable
(t) Oxidising properties:	not applicable

### Other information

Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry constant:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

Corrosive to metals

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

### Possibility of hazardous reactions

Explosive reaction with: Alkali metals Alkaline earth metal Violent reaction with: Alkali (lye) light metals Powdered metals

### Conditions to avoid

no data available

### Incompatible materials

Metal, base

### Hazardous decomposition products

no data available

### Additional information

no data available

## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute effects

*Acute oral toxicity:*

no data available

*Acute dermal toxicity:*

no data available

*Acute inhalation toxicity:*

no data available

#### Irritant and corrosive effects

*Primary irritation to the skin:*

Causes severe skin burns and eye damage.

*Irritation to eyes:*

Causes serious eye damage.

*Irritation to respiratory tract:*

not applicable

#### Respiratory or skin sensitisation

In case of skin contact: not sensitising

After inhalation: not sensitising

#### STOT-single exposure

not applicable

#### STOT-repeated exposure

not applicable

#### CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

##### Carcinogenicity

No indication of human carcinogenicity.

**Germ cell mutagenicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Aspiration hazard**

not applicable

**Other adverse effects**

no data available

**Additional information**

no data available

## SECTION 12: Ecological information

**Ecotoxicity****Acute (short-term) fish toxicity:**

no data available

**Chronic (long-term) fish toxicity:**

no data available

**Acute (short-term) daphnia toxicity:**

no data available

**Chronic (long-term) daphnia toxicity:**

no data available

**Acute (short-term) algae toxicity:**

no data available

**Chronic (long-term) algae toxicity:**

no data available

**Persistence and degradability**

no data available

**Bioaccumulative potential**

Partition coefficient: n-octanol/water: no data available

**Mobility in soil:**

no data available

**Results of PBT/vPvB assessment**

no data available

**Other adverse effects**

no data available



## SECTION 13: Disposal considerations

### Waste treatment methods

#### Appropriate disposal / Product

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal. Send to a hazardous waste incinerator facility under observation of official regulations.

Waste code product: no data available

#### Appropriate disposal / Package

Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

#### Additional information

no data available

## SECTION 14: Transport information

### Land transport (ADR/RID/DOT)

UN-No.:	2796
Proper Shipping Name:	SULPHURIC ACID
Class(es):	8
Classification code:	C1
Hazard label(s):	8
Packing group:	II
Environmental hazards:	No
Special precautions for user:	
Hazard identification number (Kemler No.):	80
Tunnel restriction code:	E
	(Passage forbidden through tunnels of category E.)

### Sea transport (IMDG)

UN-No.:	2796
Proper Shipping Name:	SULPHURIC ACID with not more than 51% acid
Class(es):	8
Classification code:	
Hazard label(s):	8
Packing group:	II
Environmental hazards:	No
MARINE POLLUTANT:	No
Special precautions for user:	
Segregation group:	1
EmS-No.	F-A S-B
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
not relevant	

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

UN-No.:	2796
Proper Shipping Name:	SULPHURIC ACID, with 51% or less acid
Class(es):	8
Classification code:	C1
Hazard label(s):	8
Packing group:	II
Special precautions for user	not relevant

## SECTION 15: Regulatory information

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

#### General rules

Water hazard class (WGK): slightly hazardous to water (WGK 1)

#### California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

### Chemical Safety Assessment

no data available

## SECTION 16: Other information

### Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road

AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)

CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures

DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)

DOT – U.S. Department of Transportation

Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)

IATA-DGR - International Air Transport Association-Dangerous Goods Regulations

ICAO-TI - International Civil Aviation Organization-Technical Instructions

IMDG - International Maritime Code for Dangerous Goods

LTV - Long Term Value

NIOSH - National Institute for Occupational Safety and Health

OSHA - Occupational Safety & Health Administration

PBT - Persistent, Bioaccumulative and Toxic

RID - Regulation concerning the International Carriage of Dangerous Goods by Rail

STV - Short Term Value

SVHC - Substances of Very High Concern

vPvB - very Persistent, very Bioaccumulative

### Additional information

Indication of changes:                      general update

*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.*