

**Safety data sheet**  
according to 1907/2006/EC, Article 31 (REACH)

Printing date 30.07.2018

Revision: 03.07.2018

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

- **1.1 Product identifier**
- **Trade name:** 2-Butanol, reagent grade
- **Article number:** AL0177
- **CAS Number:** 78-92-2
- **EC number:** 201-158-5
- **Index number:** 603-127-00-5
- **Registration number** 01-2119475146-36-XXXX
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the preparation:** Laboratory reagent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Scharlab, S.L.  
C/Gato Pérez, 33. Pol.Ind. Mas d'en Cisa  
08181 Sentmenat (Barcelona) SPAIN  
Tel: (+34) 93 745 64 00 - FAX: (+34) 93 715 27 65  
email: scharlab@scharlab.com  
Internet Web Site: www.scharlab.com
- **Regional representation:**  
Scharlab, S.L.  
C/Gato Pérez, 33. Pol.Ind. Mas d'en Cisa  
08181 Sentmenat (Barcelona) SPAIN  
Tel: (+34) 93 745 64 00 - FAX: (+34) 93 715 27 65  
email: scharlab@scharlab.com  
Internet Web Site: www.scharlab.com
- **Further information obtainable from:** technical department
- **1.4 Emergency telephone number:**  
Please contact the regional Scharlab distributor/dealer in your country  
During normal opening times: Scharlab, S.L. (+34) 93 715 18 11

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.

(Contd. on page 2)

**Safety data sheet**  
according to 1907/2006/EC, Article 31 (REACH)

Printing date 30.07.2018

Revision: 03.07.2018

**Trade name:** 2-Butanol, reagent grade

(Contd. of page 1)

**Hazard pictograms**

GHS02 GHS07

**Signal word** Warning**Hazard statements**

H226 Flammable liquid and vapour.

H319 Causes serious eye irritation.

**Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof electrical/ventilating/lighting equipment.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.

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****3.1 Chemical characterisation: Substances****CAS No. Description**

78-92-2 butanol

**Identification number(s)****EC number:** 201-158-5**Index number:** 603-127-00-5**SECTION 4: First aid measures****4.1 Description of first aid measures****After inhalation:** Supply fresh air; consult doctor in case of complaints.**After skin contact:** Generally the product does not irritate the skin.**After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing:** If symptoms persist consult doctor.**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.

(Contd. on page 3)

**Safety data sheet**  
according to 1907/2006/EC, Article 31 (REACH)

Printing date 30.07.2018

Revision: 03.07.2018

**Trade name:** 2-Butanol, reagent grade

(Contd. of page 2)

**SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**  
No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

**SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **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).  
Ensure adequate ventilation.
- **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** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**  

---

**78-92-2 butanol**  
WEL Short-term value: 462 mg/m<sup>3</sup>, 150 ppm  
Long-term value: 308 mg/m<sup>3</sup>, 100 ppm
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing

(Contd. on page 4)

## Safety data sheet

according to 1907/2006/EC, Article 31 (REACH)

Printing date 30.07.2018

Revision: 03.07.2018

**Trade name:** 2-Butanol, reagent grade

(Contd. of page 3)

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

• **Respiratory protection:**

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.

• **Protection of hands:**



Protective gloves

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

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

• **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.

• **Eye protection:**



Tightly sealed goggles

### SECTION 9: Physical and chemical properties

• **9.1 Information on basic physical and chemical properties**

• **General Information**

• **Appearance:**

• **Form:**

Fluid

• **Colour:**

Colourless

• **Odour:**

Sweetish

• **Odour threshold:**

Not determined.

• **pH-value:**

Not determined.

• **Change in condition**

• **Melting point/freezing point:**

-114 °C

• **Initial boiling point and boiling range:**

100 °C

• **Flash point:**

24 °C

• **Flammability (solid, gas):**

Not applicable.

• **Ignition temperature:**

390 °C

• **Decomposition temperature:**

Not determined.

• **Auto-ignition temperature:**

Not determined.

• **Explosive properties:**

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31 (REACH)

Printing date 30.07.2018

Revision: 03.07.2018

**Trade name:** 2-Butanol, reagent grade

(Contd. of page 4)

- **Explosion limits:**
  - Lower:** 1.7 Vol %
  - Upper:** 9.8 Vol %
- **Vapour pressure at 20 °C:** 17 hPa
- **Density at 20 °C:** 0.81 g/cm<sup>3</sup>
- **Relative density:** Not determined.
- **Vapour density:** Not determined.
- **Evaporation rate:** Not determined.
- **Solubility in / Miscibility with water at 20 °C:** 200 g/l
- **Partition coefficient: n-octanol/water:** Not determined.
- **Viscosity:**
  - Dynamic at 20 °C:** 4.21 mPas
  - Kinematic:** Not determined.
- **9.2 Other information:** No further relevant information available.

**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:** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

**SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects:**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:**

---

Oral LD50 6,480 mg/kg (rat)
- **Primary irritant effect:**
- **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation:** Causes serious eye irritation.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **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.
- **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.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

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

(Contd. on page 6)

## Safety data sheet

according to 1907/2006/EC, Article 31 (REACH)

Printing date 30.07.2018

Revision: 03.07.2018

**Trade name:** 2-Butanol, reagent grade

(Contd. of page 5)

- **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.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
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.

### SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1120
- **14.2 UN proper shipping name**
- **ADR** 1120 BUTANOLS
- **IMDG, IATA** BUTANOLS
- **14.3 Transport hazard class(es)**
- **ADR, IMDG, IATA**



- **Class** 3 Flammable liquids.
- **Label** 3
- **14.4 Packing group**
- **ADR, IMDG, IATA** III
- **14.5 Environmental hazards:**
- **Marine pollutant:** No
- **14.6 Special precautions for user** Warning: Flammable liquids.
- **Danger code (Kemler):** 33
- **EMS Number:** F-E,S-D
- **Stowage Category** A
- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.
- **Transport/Additional information:**
- **ADR**
- **Limited quantities (LQ)** 5L
- **Transport category** 3

(Contd. on page 7)

**Safety data sheet**  
according to 1907/2006/EC, Article 31 (REACH)

Printing date 30.07.2018

Revision: 03.07.2018

**Trade name:** 2-Butanol, reagent grade

- **Tunnel restriction code**
- **UN "Model Regulation":**

D/E  
UN 1120 BUTANOLS, 3, III

(Contd. of page 6)

**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** Substance is not 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
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 40
- **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.

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

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

- **Department issuing SDS:** product safety department
- **Contact:** msds@scharlab.com
- **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)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport 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

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2