

MATERIAL SAFETY DATA SHEET (MSDS)

Potassium Hydroxide Solution

SECTION 1 -

CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Potassium Hydroxide Solution 40% To 50%

Catalog Numbers: SF/ **ELE-1**

Synonyms: **Electrolyte Fluid** for SPIRFLAME®

Company Identification: Spirig Ernest, Dipl.Ing., Hohlweg 1, CH-8640 Rapperswil, Switzerland

For information, PHONE: (+41) 55 222 6900 FAX: (+41) 55 222 6969 info@spirig.com

Emergency INFOTRAC : **USA +1 352 323 3500**

Emergency Number: -

For CHEMTREC assistance, call: -

For International CHEMTREC assistance, call: -

SECTION 2 -

COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	%	EINECS#
1310-58-3	Potassium hydroxide	approx. 30	215-181-3
proprietary	Additives, various	< 5	proprietary
7732-18-5	Water	Balance	231-791-2

Hazard Symbols:	C
Risk Phrases:	35

SECTION 3 -

HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: Clear to slightly turbid.

Danger! Causes skin burns. Causes eye burns. Causes digestive tract burns. Causes respiratory tract burns. **Corrosive.**

Target Organs: None.

Potential Health Effects

Eye: Causes severe eye burns. May cause irreversible eye injury. Contact may cause ulceration of the conjunctiva and cornea. Eye damage may be delayed.

Skin: Causes skin burns. May cause deep, penetrating ulcers of the skin.

Ingestion: May cause circulatory system failure. May cause perforation of the digestive tract. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death.

Inhalation: Irritation may lead to chemical pneumonitis and pulmonary edema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma.

Chronic: Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated eye contact may cause conjunctivitis.

SECTION 4 -

FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing in a manner which limits further exposure.

Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water.
Never give anything by mouth to an unconscious person.
Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
 Notes to Physician: Treat symptomatically and supportively.
 Antidote: None reported.

SECTION 5 - FIRE FIGHTING MEASURES

General Information: Does not apply.
 Extinguishing Media: Does not apply.
 Autoignition Temperature: Does not apply.
 Flash Point: Does not apply.
 NFPA Rating: 3-0-1-COR
 Association: NFPA = USA National Fire Protection
 Does not apply. Explosion Limits:



SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.
 Spills/Leaks: Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Neutralize spill with a weak acid such as vinegar or acetic acid.

SECTION 7 - HANDLING and STORAGE

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.
 Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
 Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Potassium hydroxide	C 2 mg/m3	none listed	none listed
Water	none listed	none listed	none listed

OSHA Vacated PELs:
 Potassium hydroxide: C 2 mg/m3
 Water: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.
 Skin: Wear appropriate gloves to prevent skin exposure.
 Clothing: Wear appropriate protective clothing to prevent skin exposure.
 Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
 Appearance: clear to slightly turbid
 Odor: odorless
 pH: 12.0 (0.1 M sol.)
 Vapor Pressure: 2.6 mm Hg @ 20 C
 Vapor Density: 0.62
 Evaporation Rate: Not available.
 Viscosity: 3.7 cP
 Boiling Point: 271 - 293 F
 Freezing/Melting Point: 48 deg F
 Decomposition Temperature: Not available.
 Solubility: Completely soluble in water
 Specific Gravity/Density: 1.51
 Molecular Formula: Solution
 Molecular Weight: Not available.

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability: Stable.
Conditions to Avoid: Incompatible materials, acids, metals.
Incompatibilities with Other Materials: Not available.
Hazardous DecompProducts: Oxides of potassium.
Hazardous Polymerization: Not available.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:
CAS# 1310-58-3: TT2100000
CAS# 7732-18-5: ZC0110000
LD50/LC50:
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg.
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg.
Carcinogenicity:
Potassium hydroxide - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Water - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No data available.
Teratogenicity: No information reported.
Reproductive Effects: No data available.
Neurotoxicity: No data available.
Mutagenicity: No data available.
Other Studies: No data available.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: Not available.
Environmental Fate: Not available.
Physical/Chemical: Not available.
Other: Not available.

SECTION 13 - DISPOSAL CONSIDERATIONS

EG Disposal Code: 20 01 15
Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants: Not listed.
RCRA D-Series Chronic Toxicity Reference Levels: Not listed.
RCRA F-Series: Not listed.
RCRA P-Series: Not listed.
RCRA U-Series: Not listed.
Not listed as a material banned from land disposal according to RCRA.

SECTION 14 - TRANSPORT INFORMATION

US DOT
Shipping Name: POTASSIUM HYDROXIDE, SOLUTION
Hazard Class: 8
UN Number: UN1814
Packing Group: II

IMO: No information available.
IATA: No information available.
RID/ADR: No information available.

Canadian TDG Shipping Name: POTASSIUM HYDROXIDE SOLUTION
Hazard Class: 8(9.2)
UN Number: UN1814

SECTION 15 - REGULATORY INFORMATION

US FEDERAL
TSCA CAS# 1310-58-3 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ) final RQ = 1000 pounds (454 kg)

Section 302 (TPQ) None of the chemicals in this product have a TPQ.

SARA Codes CAS # 1310-58-3: acute, reactive.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act: This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act: CAS# 1310-58-3 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority

Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE: Potassium hydroxide can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts. Not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations / European Labeling in Accordance with EC Directives

Hazard Symbols: C Corrosive

Risk Phrases: R 22 Harmful if swallowed
R 35 Causes severe burns.

Safety Phrases: S 1/2 Keep locked up and out of reach of children
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)



WGK (Water Danger/Protection)

CAS# 1310-58-3: 1

CAS# 7732-18-5:

Canada CAS# 1310-58-3 is listed on Canada's DSL/NDSL List.

CAS# 7732-18-5 is listed on Canada's DSL/NDSL List.

This product has a WHMIS classification of E.

CAS# 1310-58-3 is listed on Canada's Ingredient Disclosure List.

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits CAS# 1310-58-3:

OEL-AUSTRALIA: TWA 2 mg/m3. OEL-BELGIUM: STEL 2 mg/m3 g/m3. OEL-JAPAN: STEL 2 mg/m3. OEL-THE NETHERLANDS: TWA 2 mg/m3 SWITZERLAND: TWA 2 mg/m3. OEL- UNITED KINGDOM: TWA 2 mg/m3; STEL 2 mg/m3. OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV. OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

SECTION 16 - ADDITIONAL INFORMATION

MSDS Creation Date: 12/12/1995

Review Date: 12/Dec/1997 25/May/1999 May 12, 2000 June 20, 2001 June 20, 2006

Compared with MSDS of leading Chemical Supply houses. No differences found.

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