Fehling's Solution B, Alkaline No. 2

Safety Data Sheet

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

1.1. Product identifier

Product form : Mixture

Product name. : Fehling's Solution B, Alkaline No. 2

Product code : LC14210

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

Use of the substance/mixture : For laboratory and manufacturing use only.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Corr. 1A H314
Eye Dam. 1 H318

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) : P260 - Do not breathe mist, spray, vapours
P264 - Wash exposed skin thoroughly after handling
P280 - Wear eye protection, face protection, protective clothing, protective gloves
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
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 POISON CENTER/doctor/…
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Water	(CAS No) 7732-18-5	56.4	Not classified
Sodium Potassium Tartrate, Tetrahydrate	(CAS No) 6381-59-5	34.6	Not classified

Name	Product identifier	%	GHS-US classification
Sodium hydroxide, 50% w/w	(CAS No) 1310-73-2	9	Skin Corr. 1A, H314 Eye Dam. 1, H318

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/injuries : Causes severe skin burns and eye damage.

Symptoms/injuries after inhalation : Corrosion of the upper respiratory tract.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin. Blisters. Destruction of tissue.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion : Bleeding of the gastrointestinal tract. Burns to the gastric/intestinal mucosa. Diarrhoea. Nausea. Vomiting.

Symptoms/injuries upon intravenous administration : Not available.

Chronic symptoms : No specific information available.

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

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable.

Explosion hazard : Not applicable.

Reactivity : Thermal decomposition generates : Corrosive vapours.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Dike and contain spill.

6.1.1. For non-emergency personnel

Protective equipment : Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store aways from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Do not breathe mist, spray, vapours. Avoid contact during pregnancy/while nursing.

Hygiene measures : Wash exposed skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.

Incompatible products : metals. Strong acids.

Incompatible materials : Direct sunlight.

Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) acids. metal powders. metals.

Packaging materials : MATERIAL TO AVOID: aluminium, tin, zinc.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sodium hydroxide, 50% w/w (1310-73-2)		
USA ACGIH	ACGIH Ceiling (mg/m³)	2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m3)	2 mg/m³

8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal protective equipment : Avoid all unnecessary exposure.

Materials for protective clothing : GIVE GOOD RESISTANCE: natural rubber. Latex gloves.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or face shield.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : Colourless.

Odour : Odourless.

Odour threshold : No data available

pH : ≥ 14

Relative evaporation rate (butylacetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Self ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapour pressure : No data available

Relative vapour density at 20 °C : No data available

Relative density : No data available

Solubility : Soluble in water.

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

Explosive properties : Not applicable.

Oxidising properties	:	No data available.
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids.

10.6. Hazardous decomposition products

Sodium oxide. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg

Skin corrosion/irritation	:	Causes severe skin burns and eye damage. pH: ≥ 14
Serious eye damage/irritation	:	Causes serious eye damage. pH: ≥ 14
Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classifiedBased on available data, the classification criteria are not met
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classifiedBased on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classifiedBased on available data, the classification criteria are not met
Aspiration hazard	:	Not classifiedBased on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	:	Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	:	Corrosion of the upper respiratory tract.
Symptoms/injuries after skin contact	:	Caustic burns/corrosion of the skin. Blisters. Destruction of tissue.
Symptoms/injuries after eye contact	:	Causes serious eye damage.
Symptoms/injuries after ingestion	:	Bleeding of the gastrointestinal tract. Burns to the gastric/intestinal mucosa. Diarrhoea. Nausea. Vomiting.
Symptoms/injuries upon intravenous administration	:	Not available.
Chronic symptoms	:	No specific information available.

SECTION 12: Ecological information

12.1. Toxicity

Sodium hydroxide, 50% w/w (1310-73-2)	
LC50 fishes 1	45.4 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
LC50 other aquatic organisms 1	100 mg/l (48 h; Daphnia magna; PURE SUBSTANCE)
LC50 fish 2	189 mg/l (48 h; Leuciscus idus)
TLM fish 1	125 ppm (96 h; Gambusia affinis; PURE SUBSTANCE)
TLM fish 2	99 mg/l (48 h; Lepomis macrochirus; PURE SUBSTANCE)
Threshold limit other aquatic organisms 1	100 mg/l (48 h; Daphnia magna; PURE SUBSTANCE)

12.2. Persistence and degradability

Fehling's Solution B, Alkaline No. 2	
Persistence and degradability	Not established.

Sodium hydroxide, 50% w/w (1310-73-2)	
Persistence and degradability	Biodegradability: not applicable. No (test)data on mobility of the components of the mixture available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oyxgen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Fehling's Solution B, Alkaline No. 2	
Bioaccumulative potential	Not established.

Sodium hydroxide, 50% w/w (1310-73-2)	
Log Pow	-3.88 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable.

Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

UN-No.(DOT) : 1824

DOT NA no. UN1824

14.2. UN proper shipping name

DOT Proper Shipping Name : Sodium hydroxide solution

Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive substances



Packing group (DOT) : II - Medium Danger

DOT Special Provisions (49 CFR 172.102)	:	B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material. T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	154
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	202
DOT Packaging Bulk (49 CFR 173.xxx)	:	242

14.3. Additional information

Other information : No supplementary information available.

Overland transport

No additional information available

Transport by sea

DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	:	52 - Stow ‘‘separated from’’ acids

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	30 L

SECTION 15: Regulatory information

15.1. US Federal regulations

Sodium hydroxide, 50% w/w (1310-73-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
RQ (Reportable quantity, section 304 of EPA's List of Lists) :	1000 lb

Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Fehling's Solution B, Alkaline No. 2	
WHMIS Classification	Class E - Corrosive Material

Sodium hydroxide, 50% w/w (1310-73-2)	
Listed on the Canadian DSL (Domestic Sustances List) inventory.	
WHMIS Classification	Class E - Corrosive Material

Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)	
Listed on the Canadian DSL (Domestic Sustances List) inventory.	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

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

Not classified

15.2.2. National regulations

Sodium hydroxide, 50% w/w (1310-73-2)
Listed on the Canadian Ingredient Disclosure List

Sodium Potassium Tartrate, Tetrahydrate (6381-59-5)
Not listed on the Canadian Ingredient Disclosure List

15.3. US State regulations

Sodium hydroxide, 50% w/w (1310-73-2)
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Minnesota - Hazardous Substance List U.S. - Massachusetts - Right To Know List

SECTION 16: Other information

Indication of changes : Revision - See : *.

Other information : None.

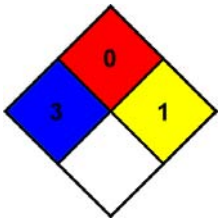
Full text of H-phrases: see section 16:

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard

Physical : 1 Slight Hazard

Personal Protection : C

SDS US (GHS HazCom 2012)