SAFETY DATA SHEET

According to regulations (CE) No. 1907/2006 and 2015/830

Revision date: 24/11/2014 Version 16.2

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

1.1 Product identifier

Catalogue No	**916B**
Product name	**Fehling's solution B**
REACH Registration Number	This product is a mixture. REACH Registration Number see section 3.

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

Identified uses	Reagent for analysis

1.3 Details of the supplier of the safety data sheet

Company : Laboratoires Dujardin-Salleron 37210 Noizay France Tél. +33 (0)2 47 25 58 25
courriel : info@dujardin-salleron.com - site : www.dujardin-salleron.com

1.4 Emergency telephone number **France :** INRS : +33 (0)1 45 42 59 59

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (Regulation (CE) N° 1272/2008)

Skin corrosion, Category 1A, H314

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labeling (Regulation (CE) N° 1272/2008)

Hazard pictograms

Signal word

Danger

Hazard statements

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

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection
P301 + 330 +331 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
P303+ P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

2.3 Other hazards

None known.

SECTION 3. Composition/informations on ingredients

Chemical nature: Aqueous solution

Non-hazardous components (Regulation (EC) No 1272/2008)

Chemical Name (Concentration):

Potassium sodium tartrate (≥ 18% - < 19%)

CAS N°	EC N°	REACH N°	Classification
6381-59-5	215-185-5	-	not classified as dangerous substance

Hazardous components (Regulation (EC) No 1272/2008)

Chemical Name (Concentration):

Sodium hydroxide (≥ 11% - ≤ 12%)

CAS N°	EC N°	REACH N°	Classification
1310-73-2	215-185-5	01-2119457892-27-XXXX	Skin corrosion, Category 1A, H314 Corrosive to metals, Category 1, H290

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. In case of respiratory tract irritation, consult a physician.
After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. In case of skin reaction, consult a physician.
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.
After swallowing: rinse out mouth with water. Do not induce vomiting. Do not give the casualty anything to eat or drink. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water, foam, dry powder or carbon dioxide.
Unsuitable extinguishing media
For this mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Not combustible.
In case of fire may be liberated: Pyrolysis products, toxic

5.3 Advice for firefighters

Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Further information
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

See sections 7 and 8 for protective measures. Use personal protection equipment.

6.2 Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent and neutralizing material (e.g. Trivorex ® (PREVOR). Dispose of properly.
Clean up affected area.

6.4 Additional information

Clear spills immediately.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Observe label precautions.
Avoid inhalation. Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Do not use metal containers.
Storage temperature: +15°C to +25°C.
Keep container tightly closed in a cool, well-ventilated place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls / personal protection

8.1 Control parameters

Components with occupational exposure limit values

Sodium hydroxide (1310-73-2)

Base	Value	Threshold limit values	Comment
Limit value for occupational exposure (VLEP France)	Time Weighted Average Threshold Limit Value	2 mg/m^3	Indicative limit values

Derived No Effect Level (DNEL)

Sodium hydroxide (1310-73-2)

Worker DNEL, long term	Local effects	inhalation	1 mg/m^3
Consumer DNEL, long term	Local effects	inhalation	1 mg/m^3

Recommended control procedures

Measuring methods of workplace atmosphere must meet DIN EN 482 and DIN EN 689 standards.

8.2 Exposure controls

Engineering measures

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.

Individual protection measures

Wear appropriate chemically protective clothing, with the CE-labels

Eye/face protection

Eye glasses with side protection

Hand protection

Wear chemically protective gloves with the CE-label. In the case of wanting to use the gloves again, clean them before taking off and air them well

By short-term hand contact:	Glove material:	Nitrile rubber
	Glove thickness:	0.12 mm
	Break through time:	> 480 min.
By long-term hand contact	Glove material:	Nitrile rubber
	Glove thickness:	0.38 mm
	Break through time:	> 480 min.

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374.
Other protective equipment
Wear appropriate chemically protective clothing, with the CE-labels
Respiratory protection
Respiratory protection: required when vapors/aerosols are generated.
Recommended filter type: P2.

Environmental exposure controls

Do not empty into drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid.
Color	indigo blue.
Odor	characteristic
Odor Threshold	No date available.
pH	> 13 at 20°C
Melting point	No data available.
Boiling point/boiling range	> 100 °C
Flash point	No data available.
Evaporation rate	No data available.
Flammability (solid, gas)	Not applicable
Lower explosion limit	No data available.
Upper explosion limit	No data available.
Vapor pressure	23 hPa
Relative vapor density	No data available.
Relative density	1.20 g/cm^3 at 20°C
Water solubility	soluble.
Partition coefficient: n- octanol/water	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity, dynamic	No data available.
Explosive properties	Not classified as explosive.
Oxidizing properties	None

9.2 Other data

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

10.1 Reactivity

No data available.

10.2 Chemical stability

The product is chemically stable for 2 years under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reaction

Reacts with light metals to form hydrogen (risk of explosion!). Reacts violently with acids.

10.4 Conditions to avoid

Direct sunlight. Extreme low temperatures or extreme hot temperature.

10.5 Incompatible materials

Aluminium, tin, zinc, acids, chloroform, acetone, ammonium compounds, nitromethane, phenols, strong acids.

10.6 Hazardous decomposition products

In the event of fire: vapors, carbon monoxide, carbon dioxide.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Mixture

Acute oral toxicity
Effective dose - species - Exposure time — No data available.
Acute dermal toxicity
Effective dose - species - Exposure time — No data available.
Acute inhalation toxicity
Effective dose - species - Exposure time — No data available.
Irritant and corrosive effects
Primary irritation of the skin
Exposure time - species — No data available.
Eye irritation
Exposure time - species — No data available.
Sensitization
In case of skin contact — No data available.
After inhalation — No data available.
Specific target organ toxicity (single exposure) — No data available.
Specific target organ toxicity (repeated exposure) — No data available.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity — No data available.
Germ cell mutagenicity/Genotoxicity — No data available.
Reproductive toxicity — No data available.
Aspiration hazards — No data available.

11.2 Additional information

Handle in accordance with good industrial hygiene and safety practice.

Components

Sodium hydroxide (1310-73-2)

Acute oral toxicity
LD50 rat: 1350 mg/kg (IUCLID)
Skin irritation
Rabbit: Result: Causes burns. (RTECS)
Eye irritation
Rabbit: Result: Causes burns. (RTECS)
Germ cell mutagenicity
Genotoxicity in vitro
Mutagenicity (mammal cell test): micronucleus. Result: negative (Lit.)
Ames test
Result: negative (IUCLID)

Teratogenicity
Did not show teratogenic effects in animal experiments. (Lit.)

SECTION 12. Ecological information

Mixture

12.1 Ecotoxicity

Acute (short-term) fish toxicity LC50 - EC50 - species - exposure time	No data available.
Chronic (long-term) fish toxicity LC50 - EC50 - species - exposure time	No data available.
Acute (short-term) daphnia toxicity LC50 - EC50 - species - exposure time	No data available.
Chronic (long-term) daphnia toxicity LC50 - EC50 - species - exposure time	No data available.
Acute (short-term) algae toxicity LC50 - EC50 - species - exposure time	No data available.
Chronic (long-term) algae toxicity LC50 - EC50 - species - exposure time	No data available.
12.2 Persistence and degradability – Biodegradability	No data available.
12.3 Bioaccumulative potential	No data available.
12.4 Mobility in soil	No data available.
12.5 Results of PBT and vPvB assessment	No data available.

12.6 Other adverse effects
Discharge into the environment must be avoided.

Components

Sodium hydroxide (1310-73-2)

Toxicity to fish
LC50 Oncorhynchus mykiss (rainbow trout): 45.4 mg/l; 96 h (50% solution) (IUCLID)
Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 76 mg/l; 24 h (50% solution) (External SDS)
Toxicity to bacteria
CE50 Photobacterium phosphoreum : 22 mg/l ; 15 min (External SDS).
Persistence and degradability
No information available
Bioaccumulative potential
Bioaccumulation is unlikely.
Mobility in soil
No information available.
Results of PBT and vPvB assessment
No information available.
Other adverse effects
May increase pH (soil, water)

SECTION 13. Disposal considerations

Waste treatment methods

Waste must be disposed of in accordance with the Directive on waste 2008/98/EC and with local and national regulations. Leave chemicals in original containers. No mixing with other waste. Treat uncleaned containers like the product itself.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	1824
14.2 Proper shipping name	SODIUM HYDROXIDE SOLUTION, MIXTURE

14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	- -
14.6 Special precautions for users	yes
Tunnel restriction code	E

Inland waterway transport (ADN))

Not relevant

Air transport (IATA)

14.1 UN number	1824
14.2 Proper shipping name	SODIUM HYDROXIDE SOLUTION, MIXTURE
14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for users	yes

Sea transport (IMDG)

14.1 UN number	1824
14.2 Proper shipping name	SODIUM HYDROXIDE SOLUTION, MIXTURE
14.3 Class	8
14.4 Packing group	II
14.5 Marine pollution	- -
14.6 Special precautions for users	yes
EMS	F-A S-B

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

SECTION 15. Regulatory information

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

Water hazard class (WKG):	WKG 1 (slightly hazardous for water)
Occupational restriction	Take note of Directive 94/33/EC on the protection of young people at work
Substances of very high concern (SVHC)	This product does not contain substances of very high concern above the respective regulatory limit (> 0.1 % (w/w) Regulation (EC) No 1907/2006 (REACH), Article 57).

15.2 Chemical Safety Assessment

See exposure scenario for component sodium hydroxide in annex.

SECTION 16. Other informations

Full text of H-Statements referred to under sections 2 and 3.

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

Training advice

Provide adequate information, instruction and training for operators.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. If does not represent a guarantee of any properties of the product.

ANNEX: Extract of the exposure scenario (ES n°2) of workers and environment for professional use of substance sodium hydroxide in accordance with REACH regulation (EC) No 1907/2006

1. Professional use (Reagent for analysis)

Sectors of end-use

SU 22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category

PC21 Laboratory chemicals

Process categories

PROC15 Use as laboratory reagent

Environmental Release Categories

ERC2 Formulation of preparations

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b Industrial use of reactive processing aids

2. Contributing scenarios: Operational conditions and risk management

2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC6a, ERC6b

Technical conditions and measures / Organizational measures

Water	Solutions with high pH-value must be neutralized before discharge.
Remarks	Do not allow uncontrolled discharge of product into the environment..

2.2 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

Concentration of the Substance in in Mixture/Article	covers the percentage of the substance in the product up to 100 %.
Physical Form (at time of use)	Aqueous solution

Frequency and duration of use

Frequency of use	600 minutes / day
Frequency of use	200 days / year

Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor without local exhaust ventilation (LEV)

Technical conditions and measures

Good work practice required. Ensure adequate ventilation, especially in confined areas.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374), coverall and eye protection. Breathing apparatus only if aerosol or dust is formed.

3. Exposure estimation and reference to its source

For (other) local effects risk management measures are based on qualitative risk characterization.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).