

### Safety data sheet according to 1907/2006/EC, Article 31

Printing date 30.10.2023

Version number 12 (replaces version 11)

Revision: 30.10.2023

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

· **1.1 Product identifier**

· **Product name: Nickel-52**

· **Catalog number:** 424402, 424402-0

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

· **Application of the substance / the preparation:** Reagent for water analysis

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**

Tintometer GmbH  
Schleefstraße 8-12  
44287 Dortmund  
Made in Germany  
www.lovibond.com

phone: +49 (0)231 94510-0  
e-mail: sales@lovibond.com

The Tintometer Limited  
Lovibond® House  
Sun Rise Way  
Amesbury  
Wiltshire SP4 7GR  
United Kingdom

phone : +44 1980 664800  
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com  
Product Safety Department

· **1.4 Emergency telephone number:**

+44 1235 239670  
Languages: English

#### SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

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



GHS05 corrosion

Met. Corr. 1 H290 May be corrosive to metals.  
Skin Corr. 1A H314 Causes severe skin burns and eye damage.  
Eye Dam. 1 H318 Causes serious eye damage.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

· **Hazard pictograms**



GHS05

· **Signal word** Danger

· **Hazard-determining components of labelling:**

sodium hydroxide

· **Hazard statements**

H290 May be corrosive to metals.

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H314 Causes severe skin burns and eye damage.

**Precautionary statements**

P260 Do not breathe mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection.

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

P310 Immediately call a doctor.

P390 Absorb spillage to prevent material damage.

• **2.3 Other hazards** Acid burns have to be treated immediately, as it may otherwise cause badly curing wounds.

**Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

**Determination of endocrine-disrupting properties**

The product does not contain substances with endocrine disrupting properties.

### SECTION 3: Composition/information on ingredients

**3.2 Mixtures**

• **Description:** aqueous solution

**Dangerous components:**

|   |   |        |
|---|---|--------|
| CAS: 1310-73-2<br>EINECS: 215-185-5<br>Index No: 011-002-00-6<br>Reg.nr.: 01-2119457892-27-XXXX | sodium hydroxide<br>⚠ Met. Corr. 1, H290; Skin Corr. 1A, H314<br>Specific concentration limits: Skin Corr. 1A; H314: C ≥ 5 %<br>Skin Corr. 1B; H314: 2 % ≤ C < 5 %<br>Skin Irrit. 2; H315: 0.5 % ≤ C < 2 %<br>Eye Irrit. 2; H319: 0.5 % ≤ C < 2 % | 10–20% |
| CAS: 95-45-4<br>EINECS: 202-420-1   | Dimethylglyoxime<br>⚠ Flam. Sol. 2, H228  | ≤2.5%  |

• **Additional information** For the wording of the listed hazard phrases refer to section 16.

### SECTION 4: First aid measures

**4.1 Description of first aid measures**

• **General information** Instantly remove any clothing soiled by the product.

• **After inhalation** Supply fresh air. Call a doctor.

**After skin contact**

Instantly wash with polyethylene glycol 400.

Instantly rinse with water.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

**After eye contact**

Rinse opened eye for several minutes (at least 15 min) under running water.

Call a doctor immediately.

**After swallowing**

Rinse out mouth and then drink 1-2 glasses of water.

Do not induce vomiting; instantly call for medical help.

**4.2 Most important symptoms and effects, both acute and delayed:**

burns

after swallowing:

after inhalation:

mucosal irritations, cough, shortness of breath

strong caustic effect.

pain

• **Danger** Danger of gastric perforation.

**4.3 Indication of any immediate medical attention and special treatment needed:**

If swallowed or in case of vomiting, danger of entering the lungs

Subsequent observation for pneumonia and pulmonary oedema

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### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**  
The product is not combustible.  
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:**  
Wear self-contained breathing apparatus.  
Wear full protective suit.
- **Additional information**  
Collect contaminated fire fighting water separately. It must not enter drains.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
Ambient fire may liberate hazardous vapours.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**  
Wear protective equipment. Keep unprotected persons away.  
Avoid substance contact.  
Ensure adequate ventilation  
Use breathing protection against the effects of fumes/dust/aerosol.
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
- **6.3 Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Use neutralising agent.  
Absorb with liquid-binding material (sand, diatomite, universal binders).  
Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**  
See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:** No special precautions necessary if used correctly.
- **Hygiene measures:**  
Do not inhale gases / fumes / aerosols.  
Do not get in eyes, on skin, or on clothing.  
Take off immediately all contaminated clothing.  
Wash hands during breaks and at the end of the work.  
Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:**  
Store away from metals.  
Do not store together with acids.
- **Further information about storage conditions:**  
Protect from heat and direct sunlight.  
Protect from the effects of light.  
Protect from humidity and keep away from water.
- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

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### SECTION 8: Exposure controls/personal protection

#### · 8.1 Control parameters

##### · Components with limit values that require monitoring at the workplace:

**CAS: 1310-73-2 sodium hydroxide**

WEL (Great Britain) Short-term value: 2 mg/m<sup>3</sup>

· **Regulatory information** WEL (Great Britain): EH40/2020

##### · DNELs

Derived No Effect Level (DNEL)

**CAS: 1310-73-2 sodium hydroxide**

|            |      |  |
|------------|------|--|
| Inhalative | DNEL | 1 mg/m <sup>3</sup> (Worker / long-term / local effects)   |
|            |      | 1 mg/m <sup>3</sup> (Consumer / long-term / local effects) |

##### · Recommended monitoring procedures:

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

· **Additional information:** The lists that were valid during the compilation were used as basis.

#### · 8.2 Exposure controls

##### · Engineering measures:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

##### · Individual protection measures, such as personal protective equipment

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

· **Eye/face protection** Tightly sealed safety glasses.

##### · Hand protection

Alkaline resistant gloves

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

##### · Material of gloves

nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.35 mm

##### · Penetration time of glove material

Value for the permeation: Level = 1 ( < 10 min )

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Other skin protection (body protection):** Alkaline resistant protective clothing

· **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

· **Recommended filter device for short term use:** Filter P2

· **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

### SECTION 9: Physical and chemical properties

#### · 9.1 Information on basic physical and chemical properties

|   |                                 |
|---|---------------------------------|
| · <b>Physical state</b>   | Fluid                           |
| · <b>Form:</b>  | Solution                        |
| · <b>Colour:</b>  | Colourless                      |
| · <b>Odour:</b>   | Odourless                       |
| · <b>Odour threshold:</b>   | Not applicable.                 |
| · <b>Melting point/Freezing point:</b>                            | Not determined.                 |
| · <b>Boiling point or initial boiling point and boiling range</b> | Not determined.                 |
| · <b>Flammability</b>   | The product is not combustible. |
| · <b>Explosive properties:</b>                                    | Product is not explosive.       |
| · <b>Lower and upper explosion limit</b>                          |                                 |
| Lower:  | Not applicable.                 |
| Upper:  | Not applicable.                 |
| · <b>Flash point:</b>   | Not applicable.                 |
| · <b>Auto-ignition temperature:</b>                               | Not applicable.                 |
| · <b>Decomposition temperature:</b>                               | Not determined.                 |

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|  |  |
|--|--|
| · pH at 20°C   | 12.5   |
| · Kinematic viscosity                                  | Strongly alkaline  |
| · Solubility   | Not determined.  |
| · Water:   | Fully miscible   |
| · Partition coefficient n-octanol/water (log value)    | Not applicable (mixture).  |
| · Vapour pressure:                                     | Not determined.  |
| · Density and/or relative density                      |  |
| · Density at 20°C:                                     | 1.14 g/cm <sup>3</sup>   |
| · Relative density:                                    | Not determined.  |
| · Relative gas density                                 | Not determined.  |
| · Particle characteristics                             | Not applicable (liquid).   |
| · 9.2 Other information                                |  |
| · Information with regard to physical hazard classes   |  |
| · Corrosive to metals                                  | May be corrosive to metals.  |
| · Metals that are corroded by the substance or mixture | Information on incompatible materials can be found in Sections 7 and 10. |
| · Other safety characteristics                         |  |
| · Oxidising properties:                                | none   |
| · Additional information                               |  |
| · Solids content:                                      | < 15 %   |
| · Solvent content:                                     |  |
| · Organic solvents:                                    | 0.0 %  |
| · Water:   | > 85 %   |

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**  
 Reacts with metals forming hydrogen (Danger of explosion in case of large amounts!)  
 Corrosive action on metals  
 Corrodes aluminium  
 Exothermic reaction with acids
- **10.4 Conditions to avoid** To avoid thermal decomposition do not overheat.
- **10.5 Incompatible materials:**  
 metals  
 light metals  
 aluminium  
 zinc  
 organic substances
- **10.6 Hazardous decomposition products:** see section 5

## SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

### · LD/LC50 values that are relevant for classification:

#### CAS: 1310-73-2 sodium hydroxide

|      |      |                                |
|------|------|--------------------------------|
| Oral | LDLo | 500 mg/kg (rabbit)<br>(IUCLID) |
|------|------|--------------------------------|

#### CAS: 95-45-4 Dimethylglyoxime

|      |      |                            |
|------|------|----------------------------|
| Oral | LDLo | 250 mg/kg (rat)<br>(RTECS) |
|------|------|----------------------------|

- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**  
 Causes serious eye damage.  
 Risk of blindness!

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· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· **Information on components:**

**CAS: 1310-73-2 sodium hydroxide**

Sensitisation Patch test (human) (negative)

· **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 (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.

· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Information on likely routes of exposure**

In the workplace, sodium hydroxide can be inhaled in the form of dusts or as a liquid aerosol. Due to the pronounced irritant effect (warning effect), prolonged massive exposures are generally avoided. In case of accidental ingestion of dust or swallowing of solution, rapid penetration of the alkali or Na and OH ions into the contacted tissues and partial transfer into the blood is to be expected.

Even if NaOH comes into contact with the skin as a solid, it will act as a concentrated solution due to its hygroscopicity through rapid water absorption.

The most frequent causes of accidents in occupational handling are accidental direct contact with eyes and skin.

· **Additional toxicological information:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**CAS: 1310-73-2 sodium hydroxide**

(source: GESTIS)

Main toxic effects:

Acute: strong irritation and caustic effect on all contacted mucous membranes and the skin, risk of irreversible eye damage (risk of blindness)

Chronic: Irritant effect on eyes, respiratory tract and skin

Further information:

Irrespective of the route of exposure, the focus is on the local effect, which is characterized by swelling and dissolution of the contacted tissue (colliquation necrosis) that progresses rapidly in depth.

The extent of the tissue damage essentially depends on the duration of exposure, concentration, pH value, dose and onset of treatment measures.

· **11.2 Information on other hazards**

· **Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

· **Other information**

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

## SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

**CAS: 1310-73-2 sodium hydroxide**

LC50 40.4 mg/l/48h (Ceriodaphnia sp.)  
(ECHA)

· **Bacterial toxicity:**

**CAS: 1310-73-2 sodium hydroxide**

EC50 22 mg/l (Photobacterium phosphoreum) (15 min)

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

**CAS: 95-45-4 Dimethylglyoxime**

log Pow -0.29 (.) (calculated)

· **12.4 Mobility in soil** No further relevant information available.

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**12.5 Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

**12.7 Other adverse effects**

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

Neutralisation possible in waste water treatment plants.

Avoid transfer into the environment.

**Water hazard:**

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

### SECTION 13: Disposal considerations

**13.1 Waste treatment methods****Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to disposers of hazardous waste.

**European waste catalogue**

16 05 06\* | laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

**Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleaning agent:** Water, if necessary with cleaning agent.

### SECTION 14: Transport information

**14.1 UN number or ID number**

· **ADR, IMDG, IATA**

UN1824

**14.2 UN proper shipping name**

· **ADR**

1824 SODIUM HYDROXIDE SOLUTION

· **IMDG, IATA**

SODIUM HYDROXIDE SOLUTION

**14.3 Transport hazard class(es)**

· **ADR**



· **Class**

8 (C5) Corrosive substances.

· **Label**

8

· **IMDG, IATA**



· **Class**

8 Corrosive substances.

· **Label**

8

**14.4 Packing group**

· **ADR, IMDG, IATA**

II

**14.5 Environmental hazards:**

Not applicable.

**14.6 Special precautions for user**

Warning: Corrosive substances.

· **Kemler Number:**

80

· **EMS Number:**

F-A,S-B

· **Segregation groups**

(SGG18) Alkalis

· **Stowage Category**

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|   |   |
|---|---|
| · <b>Segregation Code</b>   | SG35 Stow "separated from" SGG1-acids   |
| · <b>14.7 Maritime transport in bulk according to IMO instruments</b> | Not applicable.   |
| · <b>Transport/Additional information:</b>                            |   |
| · <b>ADR</b>  |   |
| · <b>Limited quantities (LQ)</b>                                      | 1L  |
| · <b>Excepted quantities (EQ)</b>                                     | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · <b>Transport category</b>   | 2   |
| · <b>Tunnel restriction code</b>                                      | E   |
| · <b>IMDG</b>   |   |
| · <b>Limited quantities (LQ)</b>                                      | 1L  |
| · <b>Excepted quantities (EQ)</b>                                     | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |

### SECTION 15: Regulatory information

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

##### · Poisons Act UK

##### · Regulated explosives precursors

None of the ingredients is listed.

##### · Regulated poisons

None of the ingredients is listed.

##### · Reportable explosives precursors

None of the ingredients is listed.

##### · Reportable poisons

The substance falls under reportable poisons due to the fact that the concentration is greater than/equal ( $c \geq x\%$ ) the stated mass percentage:

|                |                  |                                 |
|----------------|------------------|---------------------------------|
| CAS: 1310-73-2 | sodium hydroxide | 12% of total caustic alkalinity |
|----------------|------------------|---------------------------------|

##### · Regulation (EU) 2019/1148 on the marketing and use of explosives precursors not regulated

##### · Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)

None of the ingredients is listed.

##### · Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:

None of the ingredients is listed.

##### · Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

##### · Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

##### · Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

##### · REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)

None of the ingredients is listed.

##### · LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

None of the ingredients is listed.

##### · Substances of very high concern (SVHC) according to REACH, Article 57

This product does not contain any substances of very high concern above the legal concentration limit of  $\geq 0.1\%$  (w / w).

##### · Substances of very high concern (SVHC) according to UK REACH

This product does not contain any substances of very high concern above the legal concentration limit of  $\geq 0.1\%$  (w / w).

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- **Directive 2012/18/EU (SEVESO III):**
  - **Named dangerous substances - ANNEX I** None of the ingredients is listed.
  - **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
  - **Information about limitation of use:** Employment restrictions concerning young persons must be observed (94/33/EC).
  - **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
- 

### SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Training hints** Provide adequate information, instruction and training for operators.
- **Relevant phrases**  
 H228 Flammable solid.  
 H290 May be corrosive to metals.  
 H314 Causes severe skin burns and eye damage.
- **Abbreviations and acronyms:**  
 OECD: Organisation for Economic Co-operation and Development  
 STOT: specific target organ toxicity  
   SE: single exposure  
   RE: repeated exposure  
 EC50: half maximal effective concentration  
 IC50: half maximal inhibitory concentration  
 NOEL or NOEC: No Observed Effect Level or Concentration  
 ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
 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  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 DNEL: Derived No-Effect Level (UK REACH)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 SVHC: Substances of Very High Concern  
 vPvB: very Persistent and very Bioaccumulative  
 Flam. Sol. 2: Flammable solids – Category 2  
 Met. Corr. 1: Corrosive to metals – Category 1  
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A  
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
- **Sources**  
 Data arise from safety data sheets, reference works and literature.  
 RTECS (Registry of Toxic Effects of Chemical Substances )  
 IUCLID (International Uniform Chemical Information Database)  
 GESTIS- Stoffdatenbank (Substance Database, Germany)
- **\* Data compared to the previous version altered.**

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