**IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

1. **Product identifier**

<table>
<thead>
<tr>
<th>Commercial name</th>
<th>SODIUM HYDROGEN SULFIDE (FLAKES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
<td>Hydrated sodium hydrosulfide (70-75 %)</td>
</tr>
<tr>
<td>CAS Nº</td>
<td>16721-80-5</td>
</tr>
<tr>
<td>EC (EINECS) Nº</td>
<td>240-778-0</td>
</tr>
<tr>
<td>Annex VI (EC) 1272/2008 Nº</td>
<td>Not listed</td>
</tr>
<tr>
<td>REACH register number</td>
<td>01-2119513719-34-0002</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Application</th>
<th>Leather depilation agent, intermediate for synthesis, water treatment additive, use in mining and paper industry.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of use</td>
<td>Industrial</td>
</tr>
<tr>
<td>Sectors of use</td>
<td>SU2a: Mining (without offshore industries); SU3: Industrial use; Uses of substances as such or in preparations at industrial sites; SU5: Manufacture of textiles, leather, fur; SU6b: Manufacture of pulp, paper and paper products; SU8: Manufacture of bulk, large-scale chemical (including petroleum products); SU9: Manufacture of fine chemical; SU10: Formulation (mixing) of preparations and/or re-packaging (excluding alloys); SU11: Manufacture of rubber products; SU12: Manufacture of plastic products, including compounding and conversion; SU13: Manufacture of other non-metallic mineral products; SU14: Manufacture of basic metals, including alloys; SU23: Electricity, steam, gas, water supply and sewage treatment.</td>
</tr>
<tr>
<td>Product category</td>
<td>PC1: Adhesives and sealants; PC7: Base metals and alloys; PC14: Metal surface treatment products, including galvanic and electroplating products; PC19: Intermediate; PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents; PC21: Laboratory chemicals; PC23: Leather tanning, dye, finishing, impregnation and care products; PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids; PC29: Pharmaceuticals; PC32: Polymer preparations and compounds; PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids; PC37: Water treatment chemicals.</td>
</tr>
</tbody>
</table>
1.3. Details of the supplier of the safety data sheet

Company: GENERAL QUÍMICA, S.A.U.
Address: Ctra. Miranda de Ebro-Puentelarrá, km. 4. 01213 Lantarón (Álava); ESPAÑA
Phone: (+34) 945 332 145
Fax: (+34) 945 332 888
e-mail address: SDSgequisa@repsol.com
Date: July 2016
Modification date: -
Revision number: -

1.4. Emergency telephone number

Emergency telephone number 24h Santander (Spain) (+34) 911 142 520
Emergency telephone number 24h Altamira (Mexico) (+44) (0) 1235 239 670

S2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification as per Regulation (EC) n.1272/2008
- Toxic by ingestion Cat. 3
- Corrosive for skin Cat. 1B Corrosive for eyes Cat. 1
- Acute aquatic toxicity Cat. 1
- Corrosive for metals Cat. 1

Classification as per Dir 67/548/EEC
- T: R24 (toxic in contact with skin)
- Xn: R22 (harmful if ingested)
- C: R34 - R31 (causes burns - in contact with acids, it liberates toxic gases)
- N: R50 (H410 Very toxic to aquatic life)

2.2. Label elements

Pictograms

Signal word
- Peligro/Danger.

Hazardous statements
- H290: May be corrosive to metals
- H301: Harmful if swallowed.
- H314: Causes severe skin burns and eye damage
- H400: Very toxic to aquatic organisms
- EUH031: Contact with acids liberates toxic gas.
- EUH071: Corrosive to the respiratory tract.

Precautionary statements
- P273: Avoid release to the environment.
- P280: Wear protective gloves/clothing/eye protection/face protection.
- P302+P352: If on skin: Wash with plenty of soapy water
- P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

2.3. Other hazards

If the product burns, it may produce irritating gases. The product may form explosive mixtures with air. The product can be corrosive to metals.
S3 | COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Sodium hydrosulfite</th>
<th>Classification Reg. (CE) 1272/2008</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toxic by ingestion Cat. 3; H301</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corrosive to skin Cat.1B; H314</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corrosive to eyes Cat. 1; H318</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute aquatic toxicity Cat. 1; H400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corrosive for metals Cat. 1; H290</td>
<td></td>
</tr>
<tr>
<td></td>
<td>70 - 75 % p/p</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sodium sulphide</th>
<th>Classification Reg. (CE) 1272/2008</th>
<th>No. CAS</th>
<th>No. CE</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toxic by ingestion Cat. 3; H301</td>
<td>1313-82-2</td>
<td>215-211-5</td>
<td>&lt; 5 % p/p</td>
</tr>
<tr>
<td></td>
<td>Corrosive to skin Cat.1B; H314</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corrosive to eyes Cat. 1; H318</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute aquatic toxicity Cat. 1; H400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corrosive to metals Cat. 1; H290</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water of crystallization</th>
<th>Classification Reg. (CE) 1272/2008</th>
<th>No. CAS</th>
<th>No. CE</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not classified</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>Remaining to 100%</td>
</tr>
</tbody>
</table>

S4 | FIRST AID MEASURES

4.1. – 4.2 Description of the first aid measures and most important symptoms and effects, both acute and delayed

**Inhalation**
- Remove affected person to fresh air.
- If breathing is difficult, give oxygen and seek immediate medical attention.

**Ingestion/aspiration**
- Seek immediate medical attention. Do not induce vomiting unless told to do so by a poison control centre or doctor. Never administer anything by mouth to an unconscious person. If the patient is conscious, remove any debris from the mouth and clean with fresh water.

**Contact with the skin**
- Remove contaminated clothing and thoroughly wash the affected parts of the body with soap and water during at least 15 minutes.
- Wash contaminated clothing thoroughly before reuse.
- Seek medical attention if irritation persists.

**Contact with the eyes**
- Flush immediately with plenty of water for at least 15 min. holding the eyelids open. Seek medical attention if irritation persists after washing.
- In case the injured person uses contact lenses, retire the lenses unless they have adhered to eyes.

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

In case of severe pain, administer an intramuscular injection of a morphomimetic analgesic drug (for example Piritramide) before sending the patient to the hospital. Give special attention to breathing difficulties.
**S5  FIREFIGHTING MEASURES**

### 5.1. Extinguishing media

**Suitable extinguishing media**
- Use foam or dry powder.

**Unsuitable extinguishing media**
- Do not use CO$_2$ or water since they can promote the generation of hydrogen sulphide (Toxic and flammable gas).

### 5.2. Special hazards arising from the substance or mixture

When the product burns, it emits toxic gases (sulphur oxides, nitrogen oxides and hydrogen sulphur). The sodium sulphide powder forms explosive/fuel mixtures with air. Avoid discharge into drains or watercourses.

### 5.3. Advice for firefighters

- Attack the fire from a safe distance and protected area. Avoid discharging the fire debris into drains or watercourses.
- Fire-fighting personnel must wear approved protective clothing for firefighting and self-contained breathing apparatus.

**S6  ACCIDENTAL RELEASE MEASURES**

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions**
- Avoid direct contact with the product and do not inhale fumes from the hot product. Keep non-essential personnel away.
- Ventilate closed spaces before entering.

**Personal protection**
- Wear appropriate protective clothing including self-contained breathing apparatus or connected to an air line.

### 6.2. Environmental precautions

Avoid discharge to sewers and public waterways. The product is toxic for the aquatic environment.

### 6.3. Methods and material for containment and cleaning up

Solid spillages are collected with shovels or other means and placed into sealed plastic bags or drums for later recycling or managed as waste (using metal drums is not advisable).

### 6.4. Reference to other sections

No additional reference
S7 HANDLING AND STORAGE

7.1. Precautions for safe handling

General precautions
- Do not smoke, eat or drink while handling the product.
- Use appropriate protective equipment to avoid direct contact.
- Eliminate all ignition sources in the material handling area: sparks, flames, static electricity or other sources of heat.

Specific conditions
- Wash hands with a mild soap once work has finished.
- Handle the product in areas with efficient ventilation systems and, as long as it is possible, keep it in closed systems.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions
- Store the product in cool, dry, well-ventilated areas.
- Store it far from other chemical products (acids and oxidants) and non-ferrous metals as zinc, aluminium or copper.
- Store in locations equipped with firefighting equipment.

Incompatible materials
- Oxidants, acids.
- The product is not corrosive to metal containers made of iron or steel.

Classification for storage of aqueous solutions: Corrosive class b) (supplementary technical instruction MIE-APQ-006, storage of corrosive liquids (BOE No 291, 12.6.1995)).

7.3. Specific end use(s)

No additional information

S8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limit values
- Particulates not otherwise classified (PNOC): Inhalable particulate: 10 mg/m³
- Respirable particulate: 3 mg/m³

DNELs calculated for workers
- Acute inhalation: 2 mg/m³
- Chronic inhalation (local): 1 mg/m³
- Chronic inhalation (systemic): 8 mg/m³

Established PNEC values for substance
- Freshwater: 0.00027 mg/L
- Sea water: 0.00027 mg/L
- Sediments in freshwater: 0.0176 mg/kg w.w.
- Marine sediments: 0.0176 mg/kg w.w.
- STP: 0.016 mg/L
8.2. Exposure controls

Appropriate technical controls
- Provide adequate ventilation and extraction systems in the workplace.
- Have eyewash systems and showers in the workplace.

Individual protection measures, such as personal protective equipment

Respiratory protection
- Standalone device or mask with input air line.

Skin protection
- Gloves (rubber, neoprene, PVC). Long-sleeved work clothes, apron and appropriate footwear to avoid contact with skin.

Eye/face protection
- Standardized security glasses, if not using a full mask (using contact lens is not advisable).

Other protective equipment
- Showers and eye-washers in the work area.

Hygiene measures in the workplace
- Shower with hot water and soap at the end of the day.
- Both clothing and equipment should be changed frequently and properly cleaned.
- Check the condition of the gloves to avoid internal contamination and discard if signs of cuts or holes are detected.
- Use skin creams after work.
- Do not smoke, eat or drink while handling the product.

S9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

- Appearance: Yellow flakes
- Odour: Sulphurous
- pH: 11.9 in solution 10 g/L at 20°C
- Melting point/freezing point: 35-55 ºC
- Initial boiling point and boiling range: 115 ºC
- Flash point: Not relevant
- Evaporation rate: Not applicable
- Flammability: Not readily flammable
- Upper/lower limits of flammability/explosiveness: Not relevant
- Vapour pressure: Not applicable
- Vapour density: Not applicable
- Relative density: 1.50 gr/cm³
- Solubility (es): 500 - 600 g /l in water at 20°C. Insoluble in organic solvents
- Partition coefficient n-octanol/water: Not relevant
- Auto-ignition temperature: Not relevant
- Decomposition temperature: >90 ºC. The product is pyrophoric when water of crystallization is less than 25%
- Viscosity: Not applicable
- Oxidising properties: Not relevant

9.2. Other information

Corrosive to non-ferrous metals
S10 STABILITY AND REACTIVITY

10.1. Reactivity
The product behaves as a moderately strong reducer.

10.2. Chemical stability
The product is stable when stored at room temperature in the original container. Stable under normal conditions of use, handling and transport. Hygroscopic product; when the product dampens, it suffers slow decomposition and releases toxic hydrogen sulphide vapours.

10.3 Possibility of hazardous reactions
No described for the solid product. In contact with the atmosphere, it can release toxic fumes of hydrogen sulphide.

10.4. Conditions to avoid
Keep away from heat, sparks and flames. Avoid contact with humidity sources. The product is corrosive to containers of non-ferrous metals.

10.5. Incompatible materials
Avoid contact with water, acids, carbon dioxide, oxidizing materials and non-ferrous metal (aluminium, copper, zinc).

10.6. Hazardous decomposition products
Hydrogen sulphide by reaction with acids and SO₂ by reaction with oxidants. In case of combustion, see section 5.

S11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity (ingestion) 
LD50: 96-208 mg/kg (rat)

Acute toxicity (dermal) 
LD50: 632 mg/kg (rabbit)

Ingestion
Sodium sulphide can cause severe burns to mucous membranes. Reaction with gastric juices generates hydrogen sulphide causing symptoms similar to those produced by inhalation.

Skin corrosion/irritation
The product is irritating. It can cause severe caustic burns with painful inflammation and possible tissue destruction.

Serious eye damage/irritation
Eye irritating with the typical conjunctivitis symptoms, such as eye ache and tears, eyelid spasms. Severe contact may cause ocular tissue destruction.

Respiratory or skin sensitization
High risk of toxicity from which hydrogen sulphide can accumulate in confined spaces due to decomposition of sodium sulphide or by reaction with acids. Symptoms include painful conjunctivitis, headache, nausea, dizziness, coughing and, in extreme cases, pulmonary oedema and death.
Mutagenicity
Negative results in vitro tests.

Carcinogenicity
Negative in standard in vitro tests. Neither the product or any of the impurities/additives present in amounts exceeding 0.1% have been classified by NTP, IARC or OSHA as a carcinogen or suspected carcinogen.

Reproductive toxicity
No evidence of teratogenicity.

STOT-single exposure
Local effects related to eyes, respiratory system and skin.

STOT-repeated exposure
They have not been described.

Other information of interest
The LC50 value for inhalation of hydrogen sulphide is established at 1500 mg/m3 for exposures of 18 minutes in rats.

S12 ECOLOGICAL INFORMATION

12.1. Toxicity

Fish
- 24h-LC50 (Semolitus atromaculatus): 4 - 10 mg/l
- 96h-LOEC (Gambusia affinis): 260 mg/l

Algae
- 72h-IC50 (Selenastrum capricornutum): 9,8 mg/l (para el Na2S)

Invertebrates
- 48h-EC50 (Daphnia magna): 0,69 mg/l (para el Na2S)

12.2. Persistence and degradability

Abiotic
- In water and soil, it quickly generates sulphates by contact with atmospheric oxygen.
- Product degradation in the environment largely depends on on environmental conditions (pH, temperature, redox potential and mineral and organic content of the medium).

Biotic
- Not applicable (inorganic product).

12.3. Bioaccumulative potential

No bioaccumulative

12.4. Mobility in soil

Inorganic salt, therefore, it is not absorbed in soil and the main effect is aquatic.

12.5. Results of PBT and vPvB assessment

The product does not meet the criteria to be considered PBT or vPvB.

12.6. Other adverse effects

No additional data
13.1. Waste treatment methods

For the product

- Recycle the product whenever possible. If re-use is not possible, handle the product as hazardous waste. If a water waste treatment plant with physical-chemical treatment is available, the product can be disposed of by being dissolved in water and treated by precipitation with iron salts or by conversion to sulphates through an oxidation-aeration process, pH >7. In any case, avoid discharge into the environment in an uncontrolled manner.

Handling

- Use properly sealed and labelled containers. Used containers should be handled so as not to generate sewers during collection, transportation and final disposal.

Contaminated containers

- Manage as HW under the laws of the country concerned.
- Never reuse used containers.

General Provisions

- The establishments and companies engaged in the recovery, disposal, collection or transportation of waste should comply with European regulations on waste management or other local, regional or national regulations in force.

14.1, 14.2, 14.3, 14.4 y 14.5

Land transport

- UN No.: 2949
- Proper shipping name: sodium hydrosulfide hydrate
- ADR/RID class: 8
- ID number Hazard: 80
- Packaging group: II
- Dangerous for the environment: YES
- Hazard label: Corrosive

Sea transport

- UN No.: 2949
- Proper shipping name: SODIUM HYDROSULFIDE HYDRATE Marine pollutant
- IMO/IMDG class: 8
- Packaging group: II
- Hazard label: Corrosive

Air transport

- UN No.: 2949
- Proper shipping name: sodium hydrosulfide hydrate
- ICAO-TI/IATA-DGR class: 8
- Packaging group: II
- Hazard label: Corrosive

14.6. Transport in bulk in accordance with appendix II of the Marpol agreement 73/78 and the IBC code

Not applicable.

14.7. Special precautions for user

Avoid direct contact with the product and dispersing it in the environment.
S15 REGULATORY INFORMATION

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

Classification and labelling
- See Section 2 of this MSDS where the hazard and precautionary statements are given.

Regulation (EC) 1907/2006
- Registered Nº: 01-2119513719-34-0002

Other regulations
- The product is listed in the following inventories: USA (TSCA), Canada (DSL), UE (EINECS), Japan (ENCS), Korea (ECL), Australia (AICS), New Zealand (NZ), Philippines (PICCS), China (CLECS).
- Product covered by Seveso Dir. (Dir. 2012/18/UE). Category E1

15.2. Chemical safety assessment

Both the chemical safety report as well as the guide for safe use are included in the registration dossier submitted to ECHA. Annex with exposition scenarios is included.

S16 Other information

Legislation applicable to the material safety data sheets

This SDS has been made in compliance with Reg. (EU) 2015/830 that modifies Annex II-Guide for the elaboration of Safety Data Sheets of Regulation (EC) 1907/2006 (REACH).

Text for the hazard statements (H phrases) referred to in section 2

- H290: May be corrosive to metals
- H301: Harmful if swallowed.
- H314: Causes severe skin burns and eye damage
- H400: Very toxic to aquatic organisms
- EUH031: Contact with acids liberates toxic gas.
- EUH071: Corrosive to the respiratory tract.

Aclaration

The information given in this document has been compiled based on the best existing information sources, latest available knowledge and according to the current requirements on classification, packaging and labelling of hazardous substances. It does not imply the information is exhaustive or accurate in all cases. It is the user’s responsibility to determine the validity of the information contained in this Material Safety Data Sheet to apply depending on the case.