

# Safety Data Sheet



Product name:


## Sofnolime RG

Revised edition no: 1343 - Rev A

Date: 10 MAR 2023

Supersedes: N/A

| Section 1 | PRODUCT AND COMPANY IDENTIFICATION |  |
|-----------|------------------------------------|--|
| 1.1       | Product Name                       | Substance name: Sofnolime RG (Soda Lime - Refinery Grade)  |
| 1.2       | CAS Number                         | Mixture  |
| 1.3       | Product Use                        | Relevant identified uses: As an absorbent for carbon dioxide and other acidic gases from industrial process streams.<br><br>Uses advised against: It is not suitable for use in breathing systems.<br>Reason why uses advised against: no data |
| 1.4       | Supplier / Manufacturer's Name     | Molecular Products Inc (a subsidiary of Molecular Products Group)<br>633 CTC Blvd, Louisville, CO 80027, USA   |
| 1.5       | Emergency Contact                  | +1 202 464 2554 US and Canada  |
| 1.6       | Date of Initial Preparation        | 10 March 2023  |
| 1.7       | Date of Previous Revision          | N/A  |

| Section 2 | HAZARDS IDENTIFICATION            |   |
|-----------|-----------------------------------|---|
| 2.1       | Emergency Overview                | Classification of the substance or mixture  |
| 2.2       | US DOT Symbols                    | Non-regulated   |
| 2.3       | European and (GHS) Hazard Symbols |  Signal Word: DANGER   |
| 2.4       | GHS Hazard Classification(s)      | Skin Corr: Category I   |
| 2.5       | Hazard Statement(s)               | H314: Causes severe skin burns and eye damage   |
| 2.6       | Precautionary Statement(s)        | P260: Do not breathe dust/fume/gas/mist/vapours/spray.<br>P264: Wash hands thoroughly after handling<br>P280: Wear protective gloves/protective clothing/eye protection/face protection.<br>P303/361/353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.<br>P305/351/338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P310: Immediately call a POISON CENTER or doctor/physician |

| Section 3 | COMPOSITION AND INFORMATION ON INGREDIENTS |                            |             |   |
|-----------|--|----------------------------|-------------|---|
| 3.1       | Composition                                | Solid bases plus additives |             |   |
| 3.2       | <i>Hazardous Ingredients</i>               | <i>CAS #</i>               | <i>WT %</i> | <i>Hazard Classification / Risk Phrases</i>               |
|           | Calcium Hydroxide                          | 1305-62-0                  | > 75%       | H315 Skin Irrit. 2<br>H318 Eye Damage 1<br>STOT SE 3 H335 |
|           | Sodium Hydroxide                           | 1310-73-2                  | < 4%        | H314 Skin Corr. 1   |

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| Section 4 |  | FIRST-AID MEASURES  |
|-----------|--|---|
| 4.1       | Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with contaminated individual. |   |
|           | Eye Contact  | If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention.                               |
|           | Skin Contact   | Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder before re-use. |
|           | Inhalation   | Move the exposed person to fresh air. Seek medical advice if symptoms develop or persist  |
|           | Ingestion  | If product is swallowed, do NOT induce vomiting! Drink plenty of water. Rinse mouth thoroughly with water! Get medical attention immediately!         |
|           | Target Organs  | Acute: Eye, Respiratory System, Skin<br>Chronic: None Known   |
| 4.2       | Medical Conditions Aggravated by Exposure  | Pre-existing skin, respiratory system or eye problems may be aggravated by prolonged contact.   |
| 4.3       | Recommendations to Physicians  | Treat symptoms  |

| Section 5 |  | FIRE-FIGHTING MEASURES   |
|-----------|--|--|
| 5.1       | Flash Point                                | Not Applicable   |
| 5.2       | Auto-Ignition Temperature                  | Not Applicable   |
| 5.3       | Flammable Limits (in air by volume, %)     | Not Applicable   |
| 5.4       | Fire Extinguishing Materials               | As appropriate for surround fire. Carbon dioxide, foam, dry chemical, halon, or water spray. |
| 5.5       | Unusual Fire and Explosion Hazards         | None known   |
| 5.6       | Explosion Sensitivity to Mechanical Impact | Not sensitive  |
| 5.7       | Explosion Sensitivity to Static Discharge  | Not sensitive  |
| 5.8       | Special Fire-Fighting Procedures           | Self-Contained Breathing Apparatus may be required.  |

| Section 6 |                         | ACCIDENTAL RELEASE MEASURES   |
|-----------|-------------------------|---|
| 6.1       | Spill and Leak Response | In the event of spill, take up mechanically (exp. Sweep or vacuum up) into tightly closed containers. Adhere to personal protective measures. Flush any remainder with plenty of water. |
| 6.2       | Spills response PPE     | Suitable eye, and skin protection should be worn as well as NIOSH approved dust mask  |

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| Section 7 HANDLING AND STORAGE |                                      |   |
|--------------------------------|--------------------------------------|---|
| 7.1                            | Work Practices and Hygiene Practices | As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dusts generated by this product. |
| 7.2                            | Storage and Handling Practices       | Ensure adequate ventilation of the storage area. Keep containers tightly closed, cool (0-35 °C) and dry, avoiding direct sunlight.  |

| Section 8 EXPOSURE CONTROLS / PERSONAL PROTECTION |   |   |                     |                     |
|---|---|---|---------------------|---------------------|
| 8.1   | Exposure Limits/Guidelines  |   |                     |                     |
| 8.2   | Chemical Name   | CAS #   | ACGIH TWA           | OSHA TWA            |
|   | Calcium Hydroxide   | 1305-62-0   | 5 mg/m <sup>3</sup> | 5 mg/m <sup>3</sup> |
|   | Sodium Hydroxide  | 1310-73-2   | 2 mg/m <sup>3</sup> | 2 mg/m <sup>3</sup> |
| 8.3   | Ventilation and Engineering Controls  |   |                     |                     |
|   | Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Use local exhaust ventilation to control airborne dust. Ensure eyewash/safety shower stations are available near areas where this product is used.  |   |                     |                     |
| 8.4   | Personal Protective Equipment   |   |                     |                     |
|   | The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada. Please reference applicable regulations and standards for relevant details. |   |                     |                     |
|   | Respiratory Protection  | Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent to U.S. State standards, Canadian CSA Standard Z94.4-93. |                     |                     |
|   | Eye protection  | Safety Glasses or chemical goggles  |                     |                     |
|   | Hand Protection   | Use protective gloves to minimize contact.  |                     |                     |
|   | Body Protection   | Use body protection to prevent contact (e.g. lab coat, coveralls).  |                     |                     |

| Section 9 PHYSICAL AND CHEMICAL PROPERTIES |                            |                           |
|--|----------------------------|---------------------------|
|  | Physical State             | Solid                     |
|  | Appearance and Odor        | White or colored, no odor |
|  | Odor Threshold (PPM)       | Not Applicable            |
|  | Vapor Pressure (mmHg)      | Not Applicable            |
|  | Vapor Density (AIR=1)      | Not Applicable            |
|  | Density                    | ≈ 0.9 g/cm <sup>3bo</sup> |
|  | Evaporation Rate (nBuAc=1) | Not Applicable            |
|  | Boiling Point (°C)         | Not Determined            |
|  | Freezing Point (°C)        | Not Determined            |

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| Section 9 | PHYSICAL AND CHEMICAL PROPERTIES |                |
|-----------|----------------------------------|----------------|
|           | pH                               | 12-14          |
|           | Specific Gravity 4° C (Water=1)  | ≈ 0.9          |
|           | Solubility in Water (%)          | Slight         |
|           | VOC                              | Not Applicable |

| Section 10 | STABILITY AND REACTIVITY                       |  |
|------------|--|--|
| 10.1       | Reactivity                                     | Heat is generated if exposed to acids.   |
| 10.2       | Stability                                      | Stable under normal handling conditions  |
| 10.3       | Decomposition Products                         | No dangerous decomposition products known.   |
| 10.4       | Materials with which Substance is Incompatible | Chloroform, trichloroethylene, damp low density/base metal, aqueous metal solutions on acids   |
| 10.5       | Hazardous Polymerization                       | Does not occur   |
| 10.6       | Conditions to Avoid                            | Contact with air – formation of calcium and sodium carbonate<br>Contact with acids – strong exothermic reaction with acids<br>Contact with damp low density metals, base metals and aqueous metal solutions produces hydrogen<br>Contact with aluminum at high temperature |

| Section 11 | TOXICOLOGICAL INFORMATION  |                   |  |                  |   |                            |
|------------|--|-------------------|--|------------------|---|----------------------------|
| 11.1       | Information on the likely routes of exposure.<br>Delayed and immediate effects and chronic effects from short or long-term exposure.<br>Information on toxicological effects.<br>Toxicity: There is no available data for the product, only for the ingredients. |                   |  |                  |   |                            |
| 11.2       | Acute Toxicity   |                   |  |                  |   |                            |
|            | 1305-62-0  | Calcium hydroxide | Oral   | LD <sub>50</sub> | >7000 mg/kg (rat) (OECD 425)                                  | ECHA 2011                  |
|            |  |                   | Dermal   | LD <sub>50</sub> | >2,500 mg/kg (rabbit) (OECD 402)                              | ECHA 2011                  |
|            | 1310-73-2  | Sodium Hydroxide  | Dermal   | LD <sub>50</sub> | 1350 mg/kg (rabbit)   | IUCLID Dataset 18-Feb-2000 |
|            | Primary irritant effect – on the skin  |                   | Irritation of skin   | IS               | >60 (in-vitro) (OECD 425)                                     | Comp. product<br>GRACE     |
|            | 1305-62-0  | Calcium hydroxide | Irritation of skin   | IS               | Rabbit (OECD 404)   | ECHA 2011                  |
|            | 1310-73-2  | Sodium hydroxide  | Irritation of skin   | IS               | 5.6 (rabbit) (§ 1500.41 in Federal Register Vol. 38, No. 187) | ECHA 2014                  |
| 11.3       | Primary irritant effect – on the eye   |                   |  |                  |   |                            |
|            | 1305-62-0  | Calcium hydroxide | Irritation of the eyes   | IS               | (rabbit) (OECD 405)   | ECHA 2011                  |
|            | 1310-73-2  | Sodium hydroxide  | Irritation of the eyes   | IS               | >2.25 (rabbit) (OECD 405)                                     | ECHA 2014                  |
|            | Suspected Cancer Agent   |                   | None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be, a cancer-causing agent by these agencies. |                  |   |                            |
|            | Irritancy  |                   | Contact with this product can be irritating to exposed skin, eyes, and respiratory system.   |                  |   |                            |
|            | Respiratory Sensitization  |                   | No further relevant information available.   |                  |   |                            |
|            | Skin Sensitization   |                   |  |                  |   |                            |

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| Section 11 TOXICOLOGICAL INFORMATION |   |   |   |  |                 |  |           |
|--------------------------------------|---|---|---|--|-----------------|--|-----------|
|                                      | 1310-73-2   | Sodium hydroxide                              | Sensitization   | IS   | 0 (human being) | ECHA 2014                                  |           |
| Additional toxicological information |   |   |   |  |                 |  |           |
|                                      | Carcinogenic categories   |   | IARC (International Agency for Research on Cancer)    |  |                 | None of the ingredients is listed.         |           |
|                                      |   |   | NTP (National Toxicology Program)                     |  |                 | None of the ingredients is listed.         |           |
|                                      |   |   | OHSA-Ca (Occupational Safety & Health Administration) |  |                 | None of the ingredients is listed.         |           |
| 11.3                                 | CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction) |   |   |  |                 |  |           |
|                                      | Carcinogenicity   |   | No further relevant information is available.         |  |                 |  |           |
|                                      | Mutagenicity  |   |   |  |                 |  |           |
|                                      | 1310-73-2   | Sodium hydroxide                              | AMES Test   | mg/plate (Salmonella typhimurium)          |                 | Negative and without metabolic activation  | ECHA 2014 |
|                                      | Reproductive Toxicity   | No further relevant information is available. | Specific target organ toxicity (single exposure)      |  |                 | No further relevant information available. |           |
|                                      | Specific target organs toxicity (repeated exposure)                       | No further relevant information is available. | Aspiration hazard                                     | No further relevant information available. |                 |  |           |

| Section 12 ECOLOGICAL INFORMATION |   |                   |  |   |                            |                                 |           |
|-----------------------------------|---|-------------------|--|---|----------------------------|---------------------------------|-----------|
| 12.1                              | Toxicity – All work practices must be aimed at eliminating environmental contamination. |                   |  |   |                            |                                 |           |
|                                   | Aquatic toxicity  |                   | No further relevant information available. |   |                            |                                 |           |
|                                   | Fish Toxicity   |                   |  |   |                            |                                 |           |
|                                   | 1305-62-0   | Calcium hydroxide | LC <sub>50</sub> (96 h)                    | 160 mg/L (Gambusia affinis)                             | IUCLID Dataset 18-Feb-2000 | 50.6 mg/L (Oncorhynchus mykiss) | ECHA 2011 |
|                                   | 1310-73-2   | Sodium hydroxide  | LC <sub>50</sub> (48 h)                    | 189 mg/L (leuciscus idus)                               | IUCLID Dataset 18-Feb-2000 |                                 |           |
|                                   | Water Flea Toxicity   |                   |  |   |                            |                                 |           |
|                                   | 1305-62-0   | Calcium hydroxide | EC <sub>50</sub> (48 h)                    | 49.1 mg/L (Daphnia magna) (OECD 202)                    |                            |                                 | ECHA 2011 |
|                                   | 1310-73-2   | Sodium hydroxide  | EC <sub>50</sub> (48 h)                    | 100 mg/L (Daphnia magna)                                | IUCLID Dataset 18-Feb-2000 |                                 |           |
|                                   | Algae Toxicity  |                   |  |   |                            |                                 |           |
|                                   | 1305-62-0   | Calcium hydroxide | EC <sub>10</sub> (72 h)                    | 79.22 mg/L (Pseudokirchneriella subcapitata) (OECD 201) | Crangon septemspinosa      |                                 |           |
| 12.2                              | Persistence and degradability   |                   | No further relevant information available. |   |                            |                                 |           |
| 12.3                              | Bioaccumulative potential   |                   | No further relevant information available. |   |                            |                                 |           |

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| Section 12 | ECOLOGICAL INFORMATION |   |
|------------|------------------------|---|
| 12.4       | Mobility in soil       | No further relevant information available.  |
| 12.5       | General Notes          | Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or unneutralized. |
| 12.6       | PBT / vPvB Assessment  | Not applicable.   |

| Section 13 | DISPOSAL CONSIDERATIONS       |  |
|------------|-------------------------------|--|
|            | Preparing Wastes for Disposal | Waste disposal must be in accordance with appropriate Federal, State, and local regulations.   |
|            | Contaminated packaging        | Treat empty containers in the same way as product. Must not be disposed of together with garbage. Do not allow product to reach sewage system. |

| Section 14 | TRANSPORTATION INFORMATION  |   |
|------------|---|---|
| 14.1       | U.S. DOT, IATA, IMO, and ADR  | Not applicable  |
| 14.2       | Proper Shipping Name  | Not applicable  |
| 14.3       | Hazard Class Number and Description   | Not applicable  |
| 14.4       | U.N. Identification Number  | Not applicable  |
| 14.5       | Packing Group   | Not applicable  |
| 14.6       | DOT Label(s) Required   | Not applicable on passenger aircraft/rail                 |
| 14.7       | North American Emergency Response Guidebook Number (2004)                                 | Not applicable  |
| 14.8       | Marine Pollutant  | Not applicable  |
| 14.9       | U.S. Department of Transportation (DOT) Shipping Regulations                              | Contains <4% Sodium Hydroxide, see special provision A16  |
| 14.10      | Transport Canada, Transportation of Dangerous Goods Regulation                            | Contains <4% Sodium Hydroxide, see special provision A16  |
| 14.11      | International Air Transport Association (IATA)  | Contains <4% Sodium Hydroxide, see special provision A16. |
| 14.12      | International Maritime Organization (IMO) Designation:                                    | Contains <4% Sodium Hydroxide, see special provision A16. |
| 14.13      | European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) | Contains <4% Sodium Hydroxide, see special provision A16. |

| Section 15 | REGULATORY INFORMATION   |                                    |
|------------|--|------------------------------------|
|            | United States Regulations  |                                    |
| 15.1       | Safety, health, and environmental regulations/legislation specific for the substance or mixture. |                                    |
|            | SARA Reporting Requirements  |                                    |
|            | SARA 302/304   | None of the ingredients is listed. |

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| Section 15 | REGULATORY INFORMATION   |  |
|------------|--|--|
|            | SARA 313   | None of the ingredients is listed.   |
|            | SARA 311/312   | Health Hazard – Skin corrosion<br>Health Hazard – Serious eye damage or irritation<br>Health Hazard – Specific target organ toxicity (single or repeated exposure) |
|            | Toxic Control Substance Act (TCSA)   | Inventory listing could not be confirmed for one or more substances.   |
| 15.2       | U.S. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65) |  |
|            | Chemicals known to cause cancer:   | This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.                       |
|            | Chemicals known to cause reproductive toxicity for females.                  | None of the ingredients is listed.   |
|            | Chemicals known to cause reproductive toxicity for males.                    | None of the ingredients is listed.   |
|            | Chemicals known to cause developmental toxicity.                             | None of the ingredients is listed.   |
| 15.3       | Carcinogenic categories  |  |
|            | Environmental Protection Agency (EPA)  | None of the ingredients is listed.   |
|            | National Institute for Occupational Safety and Health (NIOSH)                | None of the ingredients is listed.   |
| 15.4       | Canadian Regulations   |  |
|            | Canadian DSL/NDSL Inventory Status   | All substances are listed or exempt from listing.  |

| Section 16 | OTHER INFORMATION  |   |
|------------|--|---|
|            | <b>This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product feature and shall not establish a legally valid contractual relationship.</b> |   |
| 16.1       | Relevant Phrases   |   |
|            | H314   | Causes severe skin burns and eye damage   |
|            | P260   | Do not breath dust/fume/gas/mist/vapors/spray   |
|            | P264   | Wash thoroughly after handling  |
|            | P280   | Wear protective gloves/protective clothing/eye protection/face protection   |
|            | P303/361/353   | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.   |
| 16.3       | Other Information  | This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties. |
| 16.4       | Abbreviations and Acronyms   |   |
|            | ADR  | Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)   |
|            | IMDG   | International Maritime Code for Dangerous Goods   |
|            | DOT  | Department of Transportation  |
|            | IATA   | International Air Transport Association   |
|            | 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)  |
|            | NFPA   | National Fire Protection Association (USA)  |
|            | HMIS   | Hazardous Materials Identification System (USA)   |
|            | LC50   | Lethal Concentration, 50 percent  |
|            | LD50   | Lethal dose, 50 percent   |

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| Section 16 | OTHER INFORMATION  |   |
|------------|--|---|
|            | PBT  | Persistent, Bioaccumulative and Toxic   |
|            | vPvB   | very Persistent and very Bioaccumulative  |
|            | NIOSH  | National Institute for Occupational Safety  |
|            | OSHA   | Occupational Safety & Health  |
|            | TLV  | Threshold Limit Value   |
|            | PEL  | Permissible Exposure Limit  |
|            | REL  | Recommended Exposure Limit  |
|            | Met. Corr. 1   | Corrosive to metals – Category 1  |
|            | Skin Corr. 1A  | Skin corrosion/irritation – Category 1A   |
|            | Skin Irrit. 2  | Skin corrosion/irritation – Category 2  |
|            | Eye Dam. 1   | Serious eye damage/eye irritation – Category 1A   |
|            | Eye Irrit. 2A  | Serious eye damage/eye irritation – Category 2A   |
|            | STOT SE 3  | Specific target organ toxicity (single exposure) – Category 3                             |
|            | PREPARED BY  | Mark Jarvis, Molecular Products, Inc.<br>Assisted by: Richard Mackay and Ruben Colmenares |
|            | Disclaimer: The information in this safety data sheet is based on the best knowledge available at the time and current legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for a particular application. As the specific conditions of use are outside the control of the supplier, the user is responsible for ensuring that the product is used in a safe way and in compliance with the relevant requirements of legislation. |   |
|            | Date of issue  | 17 March 2023   |