

PREI-16 — Chemical Soil Stabiliser

1. Identification of the substance and the supplier

Product	PRO-ROAD® PREI-16 — alkaline aqueous sodium silicate solution with surfactants.
Recommended use	Chemical stabilisation of soils, subgrades, sub-bases and bases; dust control on unpaved roads.
Restrictions on use	Do not mix with acids: the reaction releases heat and may generate silica gel. Do not freeze.
Supplied by	PRO-ROAD® — Soluciones en Suministros, Ingeniería y Construcción S.A.S. (Colombia) · Escher Infrastructure LLC (USA) · Penrose Solutions LLC. Cra. 14B No. 106-60 Of. 403, Bogotá D.C., Colombia. www.proroadglobal.com · info@proroadglobal.com
24 h emergency telephone	PRO-ROAD® 24 h: (+57) 301 502 5015 · Colombia — national emergency line 123 · CISPROQUIM (+57) 601 288 6012 / 018000 916012 · United States — CHEMTREC 1-800-424-9300 · International — CHEMTREC +1 703 527 3887

2. Hazards identification

Signal word	DANGER
GHS classification	Skin corrosion category 1B · Serious eye damage category 1 · Specific target organ toxicity, single exposure, category 3 (respiratory tract irritation). Alkaline product, typical pH 11–13 in the concentrate.
Hazard statements (H)	H314 — Causes severe skin burns and eye damage. · H318 — Causes serious eye damage. · H335 — May cause respiratory irritation.
Precautionary statements (P)	P260 — Do not breathe dust, fume, gas, mist, vapours or spray. · P264 — Wash thoroughly after handling. · P280 — Wear protective gloves, clothing, eye and face protection. · P302+P352 — IF ON SKIN: wash with plenty of soap and 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. · P308+P313 — IF exposed or concerned: get medical advice/attention. · P405 — Store locked up. · P501 — Dispose of contents and container in accordance with applicable local regulations.
Pictograms	GHS05 (corrosion)
NFPA 704 — Health / Flammability / Reactivity	Health 2 · Flammability 0 · Reactivity 0 · Special hazard: alkaline

The product is neither flammable nor acutely toxic, but it is strongly alkaline in concentrated form. The principal risk is serious and irreversible eye injury from direct splashing and chemical burn of the skin from prolonged contact. Alkaline solutions cause deeper and more progressive corneal injury than acids of equivalent pH, so eye irrigation must be immediate and prolonged. The diluted application form (typically 1:100 to 1:400 in the compaction water) presents a substantially lower risk, but handling the concentrate requires full protection.

3. Composition / information on ingredients

Component	CAS No.	Concentration
Sodium silicate	1344-09-8	20 – 45 %
Water	7732-18-5	50 – 78 %
Surfactants and additives	Proprietary	< 5 %

The percentages indicated are representative ranges of the formulation. Components not listed are either not classified as hazardous or are below the concentration limits that require declaration under GHS. The precise chemical identity of the additives is proprietary information; it is disclosed to health authorities and to medical personnel who require it to respond to an emergency.

4. First-aid measures

Inhalation	Move into fresh air. If throat or respiratory tract irritation persists, consult a physician.
Skin contact	Immediately remove contaminated clothing and footwear. Wash the skin with plenty of water for at least 20 minutes. Do not neutralise with acids. Seek medical attention at any sign of burn, even if pain is mild: alkaline burns progress.
Eye contact	MEDICAL EMERGENCY. Rinse immediately with clean water or saline for at least 30 minutes, holding the eyelids apart and moving the eye in all directions. Remove contact lenses after the first few minutes of irrigation if possible. Continue irrigation during transport. Seek urgent ophthalmic assessment in all cases.
Ingestion	Do not induce vomiting; reflux of the alkaline product would aggravate oesophageal injury. Rinse the mouth with water and, if the person is conscious, give water in small sips. Seek immediate medical attention.

Notes for medical personnel

Caustic alkali injury. In ocular exposure, measure conjunctival pH and continue irrigation until normalisation (pH 7.0–7.5) before stopping; slit-lamp assessment with fluorescein staining is essential. In ingestion, upper gastrointestinal endoscopy within the first 12 to 24 hours allows the injury to be graded; emetics, gastric lavage and neutralising agents are contraindicated.

5. Fire-fighting measures

Extinguishing media	The product is not flammable. Use the agent appropriate to the surrounding material.
Specific hazards	In a fire nearby, the water in the product evaporates leaving a solid alkaline silicate residue. No toxic gases specific to the product are generated.
Protective equipment for fire-fighters	Standard fire-fighting protective equipment; eye and skin protection against product splashes.

6. Accidental release measures

Prevent access by unprotected persons. Contain the spill with sand or earth dikes. Do not apply pressurised water: it would disperse the alkaline product. Absorb with inert material (sand, diatomaceous earth, vermiculite) and transfer to closed, labelled plastic containers. Do not use sawdust or combustible organic material. Neutralise the residual surface with plenty of water and check the pH of the wash water before allowing it to run off. Prevent entry into sewers and water bodies: the product raises the pH and may cause aquatic fauna mortality.

7. Handling and storage

Handle the concentrate only with the full protective equipment indicated in section 8. Always dilute by adding the product to the water, never the reverse. Do not mix with acids or with aluminium, magnesium or zinc salts. Use alkali-resistant pumps and hoses; aluminium and zinc are not suitable materials. Keep safety showers and eyewash stations tested and accessible at the dosing point. Wash before eating, drinking or smoking.

Store in a controlled environment, protected from freezing and from direct sunlight, in the original closed containers. Do not store next to acids. Suitable packaging materials: high-density polyethylene, carbon steel, stainless steel. Typical shelf life of 12 months from manufacture.

8. Exposure controls / personal protection

Occupational exposure limits	No specific occupational exposure limits have been established for sodium silicate in most jurisdictions. Apply as a reference the limit for alkaline mists: ACGIH TLV-TWA 2 mg/m ³ for alkali hydroxides. Verify the regulations in force in the country of use.
Engineering controls	Adequate general ventilation. Local exhaust where mist or aerosol is generated. Safety shower and emergency eyewash mandatory and reachable within 10 seconds from the concentrate handling point.

Personal protective equipment

Sealed safety goggles AND full face shield during transfer of the concentrate. Long-cuffed nitrile, butyl or neoprene gloves. Alkali-resistant impermeable apron or suit. Impermeable boots. Respiratory protection against alkaline mists if aerosol is generated.

9. Physical and chemical properties

Property	Value
Physical state	Viscous liquid
Colour and odour	Colourless to slightly amber; practically odourless
pH (concentrate)	11 – 13
Density	1.20 – 1.45 g/cm ³ (20 °C)
Solubility in water	Complete, in any proportion
Flammability	Non-flammable
Freezing point	≈ -5 to 0 °C — freezing may cause irreversible gelation

10. Stability and reactivity

Stable under the storage conditions indicated. Conditions to avoid: freezing, evaporation from an open container (produces silicate crusts) and contact with atmospheric carbon dioxide over large surfaces. Incompatible materials: strong and weak acids (exothermic reaction with silica gel formation), aluminium, zinc, magnesium and their alloys (reaction releasing flammable hydrogen), polyvalent metal salts. Hazardous decomposition products: none under normal conditions.

11. Toxicological information

Acute oral toxicity: low; sodium silicate has an oral LD50 in the rat of the order of 1,150 to 3,400 mg/kg depending on the SiO₂:Na₂O ratio, corresponding to category 4 or to no classification. The determining effect is not systemic but local: corrosion of skin and mucous membranes from the alkaline pH. Eye contact: serious, potentially irreversible eye damage with a risk of permanent corneal opacity. Skin contact: chemical burn on prolonged contact; brief contact with diluted product causes only irritation. Inhalation: mist irritates the upper respiratory tract. Sensitisation, mutagenicity, carcinogenicity and reproductive toxicity: no effects identified.

12. Ecological information

The environmental hazard of the product is physical and chemical in nature, through pH elevation, rather than intrinsic toxicity. Sodium silicate hydrolyses and neutralises in the environment, and the resulting silicon is a natural component of soils and waters. A concentrated discharge into a water body may raise the pH above the range tolerable by aquatic fauna and cause mortality; the effect is local and transient if the receiving body has buffering capacity. Not bioaccumulative. Do not discharge to the sewer or to the natural environment without prior neutralisation and pH verification.

13. Disposal considerations

Dispose of residual product and its packaging in accordance with applicable local, regional and national regulations, through an authorised waste manager. In Colombia, Decree 4741 of 2005 and Resolution 1362 of 2007 on hazardous waste management apply; in the United States, RCRA (40 CFR parts 260-273); in the European Union, Directive 2008/98/EC. Do not discharge into the sewer system, onto soil or into water bodies. Do not reuse empty containers without prior decontamination.

14. Transport information

Property	Value
Road (ADR / DOT), sea (IMDG) and air (IATA-DGR)	In most transport regimes, sodium silicate solutions with a pH below 11.5 are not classified. For concentrations and pH that trigger the corrosivity criterion: UN 1719 — CAUSTIC ALKALI LIQUID, N.O.S., class 8, packing group III.
Marine pollutant	Not classified as a marine pollutant under Annex III of MARPOL 73/78.
HS code	3824.40.0000

Classification depends on the pH and concentration of the batch shipped, as certified in the quality certificate. Confirm the classification with the carrier before each shipment.

15. Regulatory information

Colombia: Decree 1496 of 2018 (adoption of GHS) and Resolution 0773 of 2021 of the Ministry of Labour. United States: OSHA Hazard Communication Standard, 29 CFR 1910.1200; for sales in California, the Proposition 65 warning applies. European Union: Regulation (EC) 1272/2008 (CLP) and Annex II of Regulation (EC) 1907/2006 (REACH). Brazil: ABNT NBR 14725. International transport: UN Recommendations (Orange Book), IMDG Code, ICAO Technical Instructions / IATA-DGR.

16. Other information

This sheet is issued as revision 01 dated August 2026 and supersedes any earlier version. It will be reviewed when the product formulation, the applicable GHS classification or the reference regulations change, and in any case every three years. Training of exposed personnel on the content of this sheet is the employer's responsibility.

ACGIH: American Conference of Governmental Industrial Hygienists · CAS: Chemical Abstracts Service · CLP: Classification, Labelling and Packaging · IARC: International Agency for Research on Cancer · IMDG: International Maritime Dangerous Goods Code · LC50: median lethal concentration · LD50: median lethal dose · NIOSH: National Institute for Occupational Safety and Health · REL: recommended exposure limit · GHS: Globally Harmonized System · TLV: threshold limit value · TWA: time-weighted average · STEL: short-term exposure limit · PEL: permissible exposure limit.

DOCUMENT FOR INTERNAL REVIEW. Composition data, CAS numbers and concentrations must be confirmed against the actual formulation and the raw-material suppliers' safety data sheets before this sheet is distributed to customers or authorities. Items marked "to be confirmed" require validation by PRO-ROAD®'s HSE officer.

This sheet has been prepared in accordance with the Globally Harmonized System (GHS) of classification and labelling of chemicals and with the 16-section format of ANSI Z400.1 / ISO 11014. In Colombia, Decree 1496 of 2018 and Resolution 0773 of 2021 of the Ministry of Labour apply; in the United States, OSHA 29 CFR 1910.1200; in the European Union, Regulation (EC) 1272/2008 (CLP) and Annex II of Regulation (EC) 1907/2006 (REACH). The information is offered in good faith and does not constitute a warranty. The employer is responsible for workplace risk assessment and for training its personnel.

