

MATERIAL SAFETY DATA SHEET · MSDS (SDS)

Lavee Xtreme

Acid-based shock treatment for photovoltaic panels with encrusted mineral soiling. Document prepared in accordance with ABNT NBR 14725 (Brazilian standard based on the GHS).

MSDS 025 (FISPQ 025)
Revision 001
Date 12 Sep 2026
Revision 000 22 Dec 2020



- **Warning — causes serious eye irritation (H319).** Eye irritation, category 2.
- **Mandatory protection:** tight-fitting safety glasses and nitrile gloves (0.11 mm).
- **If in eyes:** rinse with water for several minutes and see an ophthalmologist.
- **Transport:** not dangerous goods under transport regulations.

Summary taken from sections 3, 4, 8 and 14 of this sheet. If in doubt, the text of the sections prevails.

1 Product and company identification

Trade name	Lavee Xtreme
Technical name	ICACITRICO 50%
Recommended use	Cleaning product (Anvisa "saneante" category) for fixed surfaces
Manufacturer	Icarai do Brasil Ind. Química Ltda. — EPP Rua Rondônia, 3 — Jacutinga, MG — Brazil Telephone +55 35 99820-3336 · sac@icaraidobrasil.com.br
Supplier	BioForcis Soluções Tecnológicas Ltda. CNPJ (Brazilian company ID) 29.682.756/0001-40 Rua Iracy Rozatti Viel, 68, Lote 11 — Vinhedo, SP — Brazil — CEP 13287-011 contato@bioforcis.com.br · www.bioforcis.com.br

Emergency telephones	+55 19 3521-7555 · +55 19 3521-6700 · +55 19 3521-7277 Toxicological Information and Assistance Center
Product shelf life	24 months

2 Composition and information on ingredients

Formula	$C_6H_8O_7$
CAS No.	77-92-9
EC No.	201-069-1
Molar mass	192.12 g/mol

3 Hazard identification

Classification (Regulation (EC) No 1272/2008)	Eye irritation, category 2 — H319
Classification (67/548/EEC or 1999/45/EC)	Xi — Irritant, R36
Pictogram	GHS07
Signal word	Warning
Hazard statement	H319 — Causes serious eye irritation.
Precautionary statements	P305+P351+P338 — IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
R-phrases	R36 — Irritating to eyes.
S-phrases	S26 — In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

4 First-aid measures

After inhalation	Fresh air.
After skin contact	Rinse with plenty of water. Take off contaminated clothing.
After eye contact	Rinse out with plenty of water. Immediately call in an ophthalmologist.
After swallowing	Make the victim drink water immediately (two glasses at most). Consult a physician.
Symptoms and effects, acute and delayed	Irritant effects, cough, pain, vomiting with blood.
Medical attention and special treatment	No information available.

5 Firefighting measures

Suitable extinguishing media	Water, carbon dioxide (CO ₂), foam or dry powder.
Unsuitable extinguishing media	No limitations of extinguishing agents are given for this substance or mixture.
Special hazards	Combustible material. In case of fire, flammable gases and hazardous vapors are formed.
Protection of firefighters	Wear self-contained breathing apparatus in case of fire.
Further information	Prevent firefighting water from contaminating surface water or groundwater.

6 Accidental release measures

Non-emergency personnel	Avoid generating dust. Avoid contact with the substance. Ensure adequate ventilation. Evacuate the danger area, follow emergency procedures and consult a specialist.
--------------------------------	---

Emergency responders	Protective equipment: see section 8.
Environmental precautions	Do not let the waste enter the drains.
Methods for containment and cleaning up	Cover drains. Collect, bind and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Proceed with waste disposal and clean up the affected area. Avoid generating dust.

7 Handling and storage

Safe handling	Observe the label precautions.
Storage and incompatibilities	Do not use metal containers. Keep tightly closed, in a dry place. Store at +15 °C to +25 °C.
Specific end uses	No specific uses are foreseen apart from those mentioned in section 1.

8 Exposure controls and personal protection

Control parameters	Contains no substances with occupational exposure limit values.
Planning measures	Appropriate technical measures and work practices should take priority over the use of personal protective equipment. See section 7.
Personal protection	The type of body protection must be chosen according to the concentration and amount of the hazardous substances, in line with the specific conditions of the workplace. The chemical resistance of the protective equipment should be confirmed with the suppliers.
Hygiene measures	Change contaminated clothing. Preventive skin protection. Wash hands after finishing work.
Skin and eye protection	Tight-fitting safety glasses.

Hand protection	Nitrile rubber gloves, thickness 0.11 mm, breakthrough time > 480 min, also for splash contact. Gloves must comply with directive EC 89/686/EEC and standard EN 374 — for example, KCL Dermatrill L (full contact) and KCL 741 Dermatrill L (splash contact). Breakthrough times were determined by KCL in tests according to EN 374, with samples of the recommended glove types. If dissolved in or mixed with other substances, consult the supplier of CE-marked gloves.
Other protective equipment	Protective clothing.
Respiratory protection	Required when dust is generated. Recommended filter type: P2.
Environmental exposure controls	Do not let the waste enter the drains.

The employer must ensure that the maintenance, cleaning and testing of respiratory protective devices are carried out according to the producer's instructions, and that these measures are documented.

9 Physical and chemical properties

Physical state	Liquid
Color	Colorless
pH	About 1.7 at 100 g/L, at 20 °C
Melting point	About 153 °C (decomposition) — OECD 102
Boiling point / range	200 °C at 1,013 hPa (decomposition)
Combustion point	Not applicable
Vapor pressure	< 0.1 hPa at 20 °C
Relative density	1.665 g/cm ³ at 18 °C — OECD 109
Solubility in water	1,330 g/L at 20 °C
Partition coefficient (n-octanol/water)	log Pow -1.72 (20 °C) — OECD TG 117. No bioaccumulation is expected.

Decomposition temperature	175 °C
Ignition temperature	540 °C
Bulk density	About 560 kg/m ³
Other properties	Evaporation rate, flammability, explosion limits, relative vapor density, auto-ignition temperature, dynamic viscosity, explosion hazards and oxidizing properties: no information available.

10 Stability and reactivity

Reactivity	The following generally applies to flammable organic substances and preparations: when finely distributed, a dust explosion potential may be assumed.
Chemical stability	The product is chemically stable under standard ambient conditions.
Possibility of hazardous reactions	Violent reactions are possible with metals, oxidizing agents, bases and reducing agents.
Conditions to avoid	Strong heating.
Incompatible materials	No information available.
Hazardous decomposition products	No information available.

11 Toxicological information

Acute oral toxicity	LD50 rat: 3,000 mg/kg (RTECS). Symptoms at high doses: irritation of mucous membranes, pain, vomiting with blood.
Acute inhalation toxicity	Symptoms: irritation of the respiratory tract.
Skin irritation	Rabbit: no irritation (OECD 404). Slight irritation.
Eye irritation	Rabbit: severe irritation (OECD 405). Causes serious eye irritation.

In vitro genotoxicity	Ames test: negative (literature).
Reproductive toxicity	No reduction in reproductive capacity in animal experiments (literature).
Teratogenicity	Did not show teratogenic effects in animal experiments (literature).
Specific target organ toxicity	The substance or mixture is not classified as a specific target organ toxicant, by single or repeated exposure.
Aspiration hazard	Based on the available data, the classification criteria are not met.
Further information	A substance that occurs in the human body under physiological conditions. After swallowing large amounts: cough. Other hazardous properties cannot be excluded; handle in accordance with good industrial hygiene and safety practice.

12 Ecological information

Toxicity to fish	LC50 <i>Leuciscus idus</i> (golden orfe): 440–760 mg/L, 96 h (IUCLID)
Toxicity to aquatic invertebrates	EC50 <i>E. sulcatum</i> : 485 mg/L, 72 h (literature). EC50 <i>Daphnia magna</i> : about 120 mg/L, 72 h (IUCLID)
Toxicity to algae	IC5 <i>Scenedesmus quadricauda</i> : 640 mg/L, 7 d. IC5 <i>M. aeruginosa</i> : 80 mg/L, 8 d (toxic threshold concentration, literature)
Toxicity to bacteria	EC50 <i>Pseudomonas putida</i> : > 10,000 mg/L, 16 h (literature)
Biodegradability	98% in 2 days — OECD TG 302B (IUCLID). Readily eliminated.
BOD / COD / ThOD	BOD 526 mg/g (5 d) · COD 728 mg/g · ThOD 750 mg/g (calculated)
Bioaccumulative potential	log Pow -1.72 (20 °C) — OECD TG 117. No bioaccumulation is expected.

Mobility in soil	No information available.
PBT and vPvB assessment	Not carried out, as a chemical safety assessment is not required.
Other adverse effects	Harmful effect due to pH shift. Discharge into the environment must be avoided.

13 Disposal considerations

Waste treatment	Waste must be disposed of in accordance with Directive 2008/98/EC and other national and local regulations. Keep chemicals in their original containers. Do not mix with other waste. Handle uncleaned containers in the same way as the product itself.
------------------------	--

14 Transport information

National and international regulations	Not dangerous goods under transport regulations.
---	--

15 Regulatory information

Specific regulations	Storage class 10–13.
Chemical safety assessment	No chemical safety assessment is carried out for this product.

16 Other information

Full text of H-statements	H319 — Causes serious eye irritation.
Full text of R-phrases	R36 — Irritating to eyes.
Training advice	Provide adequate information, instructions and training for operators.
Standard followed	Sheet prepared in accordance with ABNT NBR 14725 - 4:2009.

Responsible chemist	Reinery Antonio Ferreira dos Reis Santos — CRQ/MG 02102396 (Regional Chemistry Council, Minas Gerais)
Revision history	Revision 000, of 22 Dec 2020 — original issue. Revision 001, of 12 Sep 2026 — document re-presented in the BioForcis graphic standard; recommended use adjusted to cleaning product (saneante); supplier CNPJ corrected. No technical data have been changed.

About this document. English translation of the technical content of FISPQ 025 (MSDS 025), presented in the BioForcis graphic standard. In case of discrepancy, the Portuguese version prevails. The original sheet in PDF, as well as test reports and approval letters, is sent on request via WhatsApp +55 11 97351-1188.

The information in this sheet represents current data and reflects our best knowledge for the proper handling of this product under normal conditions and in accordance with the application specified on the packaging and in the literature. Any other use of the product, including use combined with another product or with other processes, is the user's responsibility.



BioForcis Soluções Tecnológicas Ltda · CNPJ 29.682.756/0001-40
Rua Iracy Rozatti Viel, 68, Lote 11 — Vinhedo, SP — Brazil — CEP 13287-011
bioforcis.com.br · contato@bioforcis.com.br · MSDS Lavee Xtreme — MSDS 025, revision 001