Version: 06.2024
Rev.0

Material safety data sheet

According to EU Regulation 1907/2006 in the current version

PRESERVATIVE LSB

1. Identification of the substance/mixture and company

Trade name:	PRESERVATIVE LSB Broad spectrum preservative
INCI	Levulinic Acid, Sorbic Acid, Benzoic Acid, Tocopherol
Utilization:	Raw material for cosmetics, personal care
Supplier company identification:	Elemental SRL, Piața Cazărmii no.15, 410188-Oradea, jud.Bihor, Romania Tel/Fax: +40259-436.755, www.ellemental.com
Emergency:	RO: număr național pentru cazuri de urgență: 021 3183606 Institutul de Sănătate Publică București. International emergency number: +49 180 2273-112

2. Hazards Identification

2.1 Classification of the substance or mixture
Classification (REGULATION (EC) No 1272/2008)
Acute Tox. 4, H302
Skin Irrit. 2, H315
Eye Dam. 1, H318
Skin Sens. 1, H317
STOT RE 1, H372 (lungs) (inhalation)
The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.
See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)
Hazard pictograms
Signal word Danger

Hazard statements
H302 + H332 Harmful if swallowed or if inhaled.
H319 Causes serious eye irritation.
Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Causes damage to organs through prolonged or repeated exposure. (lungs) (inhalation)

Precautionary statements
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves, protective clothing, eye protection, face protection..
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P501 - Dispose of contents and container to in accordance with local/regional/national/international regulations

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Declaration of ingredients

3.2 Mixtures

Components

Chemical name	Identifiers	Classification	Concentration (% w/w)
levulinic acid	REACH #: 01-2120116230-78 EC: 204-649-2 CAS: 123-76-2	Acute Tox. 4, H302 Eye Dam. 1, H318 Skin Sens. 1, H317 ATE [Oral] = 1850 mg/kg	>= 75 - < 90
benzoic acid	REACH #: 01-2119455536-33 EC: 200-618-2 CAS: 65-85-0 Index: 607-705-00-8	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT RE 1, H372 (lungs) (inhalation) ATE [Oral] = 1700 mg/kg	>= 10 - < 25
sorbic acid	REACH #: 01-2119950330-49 EC: 203-768-7 CAS: 110-44-1	≤10	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of H and EUH phrases: see section 16
Occupational exposure limits, if available, are listed in Section 8.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

4. First aid measures

4.1 Description of first aid measures
If inhaled Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory

arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

In case of skin contact Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse

In case of eye contact Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

If swallowed Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband

4.2 Most important symptoms and effects, both acute and delayed
Symptoms/effects after eye contact : Eye irritation

4.3 Indication of any immediate medical attention and special treatment needed
Treatment : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire fighting measures

5.1 Extinguishing media
Suitable extinguishing media : Water spray Alcohol-resistant foam Dry chemical, carbon dioxide (CO2).
Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting : Heating or fire can release toxic gas. Do not allow run-off from fire fighting to enter drains or water courses.

5.3 Advice for firefighters
Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
Do not intervene without appropriate protective equipment. Selfcontained

breathing apparatus. Full body protection. Use a self-contained breathing apparatus and chemical resistant protective clothing

Further information : Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials

6.2 Environmental precautions
Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air)

6.3 Methods and material for containment and cleaning up
Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

7. Handling and storage

7.1 Precautions for safe handling
Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product

residue and can be hazardous. Do not reuse container. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures

7.2 Conditions for safe storage, including any incompatibilities
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)
Specific use(s) : No other information available.

8. Exposure controls / personal protection

8.1 Control parameters
Occupational Exposure Limits
Contains no substances with occupational exposure limit values.

Recommended monitoring Procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
No DNELs/DMELs available

8.2 Exposure controls
Appropriate engineering controls
If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Hygiene measures
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye and face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. (EN166) If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
Skin protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Wear suitable gloves tested to EN374. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. (EN343) Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product
Respiratory protection
Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Environmental exposure controls
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties
Appearance liquid
Colour yellow
Odour characteristic, acidic
Odour Threshold no data available
pH no data available
Melting point/range no data available
Boiling point/boiling range no data available
Flash point > 120 °C closed cup
pH: 2.6 [Conc. (% w/w): 1%]
Evaporation rate no data available
Flammability (solid, gas) no data available
Upper explosion limit no data available
Lower explosion limit no data available
Vapour pressure not determined
Relative vapour density not determined
Relative density no data available
Density 1,100 - 1,150 g/cm3

Water solubility partially soluble
Partition coefficient: n-octanol/water no data available
Auto-ignition temperature not determined
Decomposition temperature no data available
Viscosity, kinematic not determined
Explosive properties No hazards to be specially mentioned.
Oxidizing properties no data available

9.2 Other information
no data available

10. Stability and reactivity

10.1 Reactivity
No specific test data related to reactivity available for this product or its ingredients

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No dangerous reactions are known under normal conditions of use.

10.4 Conditions to avoid
Not present under recommended storage and handling conditions (see section 7).

10.5 Incompatible materials
Materials to avoid : No specific data.

10.6 Hazardous decomposition products
Under normal conditions of storage and use, no hazardous decomposition products should be generated

11. Toxicological information

Information on the hazard classes defined in Regulation (EC) no. 1272/2008
Acute toxicity
levulinic acid LD50 Dermal Rabbit >5 g/kg -
LD50 Oral Rat 1850 mg/kg -
benzoic acid LD50 Oral Rat 1700 mg/kg -
Sorbic acid LD50 Oral Rat 7360 mg/kg –
Acute toxicity estimates

Product	Oral (mg/kg)	Dermal(mg/kg)	Inhalation(gases) (ppm)	Inhalation(vapors) (mg/l)	Inhalation(dusts) (mg/l)
levulinic acid	1850	N/A	N/A	N/A	N/A
benzoic acid	1700	N/A	N/A	N/A	N/A
Sorbic acid	7360	N/A	N/A	N/A	N/A

Irritation/Corrosion Not available
Sensitisation Not available
Mutagenicity Not available
Carcinogenicity Not available
Reproductive toxicity Not available
Taratogenicity Not available
Specific target organ toxicity (single exposure)
Sorbic acid Category 3 - Respiratory tract irritation
Specific target organ toxicity (repeated exposure)
benzoic acid Category 1 Inhalation lungs
Aspiration hazard Not available

Potential acute health effects
Eye contact: Causes serious eye damage
Inhalation : No known significant effects or critical hazards.
Ingestion: Harmful if swallowed
Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Delayed and immediate effects and also chronic effects from short and long term exposure
Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.
Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.
Potential chronic health effects: Not available.

General: Causes damage to organs through prolonged or repeated exposure if inhaled. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity: No known significant effects or critical hazards.

11.2 Information on other hazards
11.2.1 Endocrine disrupting properties
Not available.
11.2.2 Other information
Not available

12. Ecological information

12.1 Toxicity

levulinic acid	EC50 1084.4 to 1111.8 mg/l Algae 2 hours
	EC50 5768 to 6700 mg/l Daphnia 24 hours

	LC50 >100 mg/l Fish 96 hours
benzoic acid	Acute EC50 860 mg/l Fresh water Daphnia - Daphnia magna – Neonate 48 hours
	Acute LC50 180 ppm Fresh water Fish - Gambusia affinis - Adult 96 hours

12.2 Persistence and degradability
Biodegradability :
levulinic acid OECD 301F Ready Biodegradability -Manometric Respirometry Test >60 % - Readily - 10 days 100 mg/l -
Sorbic acid OECD 301E Ready Biodegradability - Modified OECD Screening Test >60 % - Readily - 10 days

12.3 Bioaccumulative potential
levulinic acid -0.482 to -0.5137 - low
benzoic acid 1.88 - low
Sorbic acid 1.33 – low

12.4 Mobility in soil
Distribution among environmental compartments :
Remarks: no data available

12.5 Results of PBT and vPvB assessment
Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Additional ecological information : no data available

13. Disposal considerations

13.1 Waste treatment methods
Dispose of contents/container in accordance with sorting instructions of authorized collector. The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
The classification of the product may meet the criteria for a hazardous waste. The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out.
Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

IATA: Not dangerous goods

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IMDG : Not dangerous goods
ADR: Not dangerous goods
RID: Not dangerous goods
DOT : Not dangerous goods
TDG : Not dangerous goods

14.1 UN number : Not applicable
14.2 Proper shipping name : Not applicable
14.3 Transport hazard class : Not applicable
14.4 Packing group: Not applicable
14.5 Environmental hazards : Marine pollutant: no
14.6 Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: Not applicable

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
EU Regulation (EC) No. 1907/2006 (REACH)
Annex XIV - List of substances subject to authorization
Annex XIV: None of the components are listed.
Substances of very high concern: None of the components are listed.
Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable
Industrial emissions (integrated pollution prevention and control) – Air/Water – Not listed
Ozone depleting substances (1005/2009/EU – Not listed
Prior Informed Consent (PIC) (649/2012/EU) – Not listed
Persistent Organic Pollutants - Not listed.
Inventory list
Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Japan : Japan inventory (CSCL): All components are listed or exempted.
Japan inventory (ISHL): Not determined.

15.2 Chemical safety assessment
This product contains substances for which Chemical Safety Assessments are still required.

16. Additional information

Full text of H-Statements
H302 Harmful if swallowed.

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H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H372 Causes damage to organs through prolonged or repeated exposure

Full text of classifications [CLP/GHS]
Acute Tox. 4 ACUTE TOXICITY - Category 4
Eye Dam. 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Eye Irrit. 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1 SKIN SENSITIZATION - Category 1
STOT RE 1 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
STOT SE 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3

16.1 Abbreviations
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CLP: Classification, Labeling, Packaging.
DNEL: Derived No Effect Level.
EINECS: European Inventory of Existing Commercial Chemical Substances.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
LTE: Long-term exposure.
PNEC: Predicted No Effect Concentration.
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STE: Short-term exposure.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.

Disclaimer:
This material safety data sheet does not constitute a guarantee of the properties of the product and is not a contractual legal report. The information is given in good faith on the basis of our best knowledge of the product at the indicated time. However, we cannot accept responsibility or liability for any consequences arising from its use, no warranty for correctness and completeness is given. We caution the users against the incurred possible risks when the product is used at other ends than the use for which it was initially planned. It is the user's responsibility during handling, storage and product use to consult the main regulatory texts in force regarding workers and environment protection.