

1. Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- Trade name: Vulcanizing Solution L-NBR
- Article number: H 0353

Chemical characterization:

Solution of polyisoprene with inorganic fillers, black carbon and rubber chemicals in methylethylketone.
Content: approx. 86% Hydrocarbon Mixture
CAS-Nr.: 78-93-3

Details on the company/supplier:

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2.1 Hazards identification

Classification according to Regulation (EC) No 1272/2008



GHS02 flame
Flam. Liq. 2

Highly flammable liquid and vapour.



GHS07
Skin Irrit. 2
STOT SE 3

Causes serious eye irritation.
May cause drowsiness or dizziness.

- Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

- Hazard pictograms:



GHS02



GHS09

- Signal word: Danger

- Danger instructions

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

- Safety instructions

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Explosion-proof electrical/ventilating/lighting equipment use.
P303+P361+P353 IF ON SKIN (or hair): Remove/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.
P405 Store locked up.
P501 Dispose of contents/container to local/regional/national/international regulations.



2.2 Hazards identification

- Information pertaining to particular dangers for man and environment

The product can cause severe skin serious skin damage. Skin and mucous membrane irritation. Can cause irritation of the eyes, nose, throat and lungs. Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage.

- Other hazards

- Results of PBT and vPvB assessment

Material does not meet the criteria for PBT or vPvB in accordance with REACH Annex XIII.

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

3. Composition/information on ingredients

- Chemical characterization: Substances

- **CAS No. Designation:** 78-93-3 2-Butanon

- **Identification number(s):**

- **EC number:** 201-159-0

- **Index number:** 606-002-00-3

- **REACH - Registration-number** 01-2119457290-43

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First aid measures

- Description of first aid measures

- General information:

Personal protection for the First Aider. Appropriate respiratory protection. Take affected persons out of danger area and instruct to lie down. Instantly remove any clothing soiled by the product.

- After inhalation

Remove the person from the danger zone under proper respiratory protection. If breathing is irregular or stopped, give artificial respiration. Comfortable for the patients and provide medical help. When respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical attention.

- After skin contact

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

- After eye contact

Rinse opened eye for at least 15 minutes under running water. Get medical attention if irritation occurs.

- After swallowing

Do not induce vomiting. Keep at rest and call a doctor immediately. Bring the patient immediately to hospital. Do not wait for symptoms to develop.

- Most important symptoms and effects, both acute and delayed

Headache, Dizziness, Sickness, tiredness, and other effects on the CNS. Signs and symptoms of eye irritation may include: Burning sensation, redness, swelling and / or blurred vision. deafness, Cramp, Weakness and paralysis which may be delayed.

- Information for doctor

By applying moisturizer to restore the skin's natural oily film. As a result, dermatitis (skin inflammation) can be prevented. Once swallowed, do not induce vomiting. Absolutely not give milk or oils. Retarding causes (slowing) of the central nervous system (depression of CNS). If ingested, material may be aspirated into the lungs and cause chemical pneumonia. Treat appropriately. Prolonged or repeated exposure may cause skin inflammation (dermatitis).

- Indication of any immediate medical attention and special treatment needed

If ingested, material may be aspirated into the lungs and cause chemical pneumonia. Treat appropriately.



5. Firefighting measures

Extinguishing media

- Suitable extinguishing agents

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

- For safety reasons unsuitable extinguishing agents Water with a full water jet.

- Special hazards arising from the substance or mixture

Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon.

- Advice for firefighters

Evacuate the area. Use water spray to cool fire exposed surfaces and to protect. Runoff from fire control materials or dilution from entering into waters, sewers or drinking water supply. Firefighters must use a standard protective equipment, including helmets with face protection and self-contained breathing protection equipment (SCBA). Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

- Protective equipment:

Wear self-contained breathing apparatus. Put on breathing apparatus.

- Additional information

Water spray to distribute the vapors used for personal protection. Cool endangered containers with water spray jet. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6. Accidental release measures

- Personal precautions, protective equipment and emergency procedures

Keep away from ignition sources. Do not smoke. Ensure good room ventilation even at ground level (vapors are heavier than air). Measures against static discharges. For a large spillage notify the fire department. Wear protective equipment. Keep unprotected persons away. Avoid contact with eyes and skin. All persons whose presence is not necessary, remove from exposure. Close leaks, if possible without personal risk to take. In case of formation of gases / vapors / aerosols are breathing. Do not breathe Gas / fumes / vapor / spray. Ensure good ventilation / exhaustion at the workplace.

- Environmental precautions:

Hold down Gases / vapors / mists with water spray. Notify Police and fire departments when leaving large amounts of product. Prevent material from reaching sewage system, holes and cellars. Do not allow to enter drainage system, surface or ground water. Prevent from spreading (e.g. by damming-in or oil barriers). Do not allow to enter the ground/soil.

- Methods and material for containment and cleaning up:

Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Use clean non-sparking tools to collect absorbed material. Avoid spillage into water and cover drains. A vapour-suppressing foam may be used to reduce vapour. Into place leaking containers in a marked barrel. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose of contaminated material as waste according to item 13. Ensure adequate ventilation. Do not flush with water or aqueous cleansing agents Send for recovery or disposal in suitable containers.

- Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.



7. Handling and storage

- Precautions for safe handling

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air). Keep away from heat and direct sunlight. Measures against static discharges. Material can accumulate static charges which can cause an electrical spark (ignition source). Use spark-proof tools and explosion proof equipment. Handle in accordance with good industrial hygiene and safety practice. Keep containers tightly sealed. Ensure good ventilation/exhaustion at the workplace. Open and handle container with care. Prevent formation of aerosols. Avoid contact with eyes and skin. Do not breathe gas / fumes / vapor / spray.

- Information about protection against explosions and fires:

flashback over long distance possible.

Upon heating, the formation of explosive mixtures are possible, fire and explosion hazard. Avoid open fire. Fumes can combine with air to form an explosive mixture. Fire exposed containers to be cooled with water spray. The fighting of the fire must be adapted to the environment. Keep ignition sources away - Do not smoke. Protect against electrostatic charges. Use explosion-proof apparatus / fittings and spark-proof tools.

- Conditions for safe storage, including any incompatibilities

Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Outdoor storage or detached storage is preferred. Fixed storage containers, transfer containers and the associated equipment should be earthed and bonded to prevent accumulation of static charges.

- Storage

- Requirements to be met by storerooms and containers:

Tanks should be equipped with a vapor return line. Store in cool location. Use only containers specifically permitted for this substance/product. Country-specific requirements for the storage of low water-polluting substances have to be aware.

- Suitable container materials

Tank cars, barrels. Store in clean steel or plastic containers.

- Suitable lining material: Carbon steel, stainless steel, polyethylene, polypropylene, polyester, Teflon

- Unsuitable container- / liner materials:

Natural rubber; butyl rubber, ethylene-propylene-diene monomer (EPDM); polystyrene

Polyethylene, polypropylene, polyacrylonitrile

- Unsuitable material for receptacle

Aluminum, fiberglass, copper, copper alloys, brass, zinc or galvanized containers.

- Information about storage in one common storage facility:

Do not store with flammable and explosive substances and articles.

- Further information about storage conditions:

Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Store container in a well ventilated position.

- Specific end use(s) No further relevant information available.

8.1 Exposure controls/personal protection

- Additional information about design of technical systems:

The necessary protection measures and the type of controls necessary will vary depending upon potential exposure conditions.

Control measures to: ensure that the load limits are not exceeded, should be provided for adequate ventilation. Explosion-proof ventilation equipment.

Electrical equipment must be suitable for temperature class T2. All equipment must comply VbF. Use explosion-proof auxiliary equipment for class EEx e II use.

- Control parameters

- Components with critical values that require monitoring at the workplace: Not required.

8.2 Exposure controls/personal protection

78-93-3 butanone (> 50.00%)

WEL	Short-term value: 899 mg/m ³ , 300 ppm Long-term value: 600 mg/m ³ , 200 ppm Sk, BMGV
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- DNELs

long-term dermal/systemic 1161 mg/kg bw/day professionally; long-term inhaled/systemic 600 mg/m³ professionally; long-term orally/systemic 31 mg/kg bw/day general; Short-time dermal/systemic 412 mg/kg bw/day general long-term inhaled/systemic 106 mg/m³ general; Note: The Derived No Effect Level (DNEL) is an estimated safe level of exposure that is derived from toxicity data in accord with specific guidance within the European REACH regulation. The DNEL may differ from an Occupational Exposure Limit (OEL) for the same chemical. OELs may be recommended by an individual company, a governmental regulatory body or an expert organization, such as the Scientific Committee for Occupational Exposure Limits (SCOEL) or the American Conference of Governmental Industrial Hygienists (ACGIH). OELs are considered to be safe exposure levels for a typical worker in an occupational setting for an 8-hour work shift, 40 hour work week, as a time weighted average (TWA) or a 15 minute short-term exposure limit (STEL). While also considered to be protective of health, OELs are derived by a process different from that of REACH.

- PNECs

freshwater: 55.8 mg/l; sea-water 55.8 mg/l; sporadic release: 55.8 mg / l;
Wastewater treatment plant: 709 mg / l; Sediment (freshwater): 284.7 mg / kg; ground: 22.5 mg/kg
ingestion (secondary poisoning): 1000 mg / kg Lebensmittel

- **Additional information:** The lists that were valid during the compilation were used as basis.

- Exposure controls

- Personal protective equipment

- General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals. Keep away from foodstuffs, beverages and food. Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work. Do not inhale gases / fumes / aerosols. Avoid contact with the eyes. Avoid contact with the eyes and skin.

- Breathing equipment:

If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air. Half-face filter respirator Type A.

- Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves Butyl rubber, BR

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection:

Tightly sealed safety glasses. A chemical goggles is recommended.

- **Body protection:** Chemical resistant safety shoes or boots.

9. Physical and chemical properties

Information on basic physical and chemical properties

- General Information / Appearance:

Form:	liquid
Colour:	black
Odour:	characteristic
Odour threshold:	not determined
pH-value:	not determined
Change in condition	
Boiling point/Boiling range:	- 86,3°C (Technical literature)
Melting point/Melting range:	79-81°C (ASTM D1078)
Flash point:	- 6 °C (Technical literature)
Inflammability (solid, gaseous):	not applicable.
Ignition temperature:	404°C (Technical literature)
Decomposition temperature:	not determined
Self-inflammability:	Product is not explosive.
Danger of explosion:	Product is not explosive. However, formation of explosive air/steam mixtures is possible.
Critical values for explosion: lower	1 Vol % (Technical literature)
Critical values for explosion: Upper	11 Vol % (Technical literature)
Vapor pressure at 20 °C:	10,4 kPa (Technical literature)
Density at 20 °C:	1,28 g/cm ³
Relative density:	not determined
Vapour density:	not determined
Evaporation rate:	not determined
Solubility in / Miscibility with Water:	290 g/l; Soluble
Partition coefficient (n-octanol/water):	not determined
Viscosity / dynamic:	10000 Ca. mPaS Hot
Viscosity / kinematic:	0,51 mm ² /s (ASTM D7042)
Organic solvents:	ca. 80-85%

Other information: Depending on the type/quality physical data may differ.

10.1 Stability and reactivity

Reactivity No further relevant information available.

- **Chemical stability** The material is stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
Hazardous polymerization will not occur. Reacts with oxidizing agents
- **Conditions to avoid**
Avoid shock, friction, heat, sparks, open flame and other ignition sources. Prevent electrostatic charging.
Excessive heat. High energy sources of ignition.
- **Incompatible materials:** Reacts with strong oxidizing agents.

10.2 Stability and reactivity

- Hazardous decomposition products:

Hazardous combustion products: toxic gases, smoke, fumes, products of incomplete combustion. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

- Additional information: The product may cause fire.

11. Toxicological information

The classification of risk is based on knowledge of the toxicity of the components contained in this product.

- Information on toxicological effects / Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral	LD50	> 2193 mg/kg (rat)
Dermal	LD50	> 5000 mg/kg (rabbit)

- Primary irritant effect:

- Skin corrosion/irritation slightly irritating

- Serious eye damage/irritation

Causes serious eye irritation.

- Irritation of the respiratory system May cause respiratory tract irritation. The effects are reversible.

- Swallowing

May be harmful if swallowed and enters airways. Based on physico-chemical properties of the material.

- Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

- Subacute to chronic toxicity:

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

- Additional toxicological information:

Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and / or repeated skin contact with low viscosity materials may defat the skin and may cause irritation and inflammation of the skin. Taking or vomiting can cause small amounts of liquid aspirated into the lungs, chemical pneumonitis or pulmonary edema.

- Repeated dose toxicity

Prolonged and / or repeated skin contact with low viscosity materials may defat the skin and may cause irritation and inflammation of the skin. Taking or vomiting can cause small amounts of liquid aspirated into the lungs, chemical pneumonitis or pulmonary edema. Vapor / aerosol concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract. This may cause headache, dizziness, numbness, cause drowsiness, unconsciousness and other effects on the central nervous system. METHYL ETHYL KETONE (MEK): Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system.

- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

- Germ cell mutagenicity Based on available data, the classification criteria are not met.

- Carcinogenicity Based on available data, the classification criteria are not met.

- Reproductive toxicity Based on available data, the classification criteria are not met.

- STOT-single exposure

May cause drowsiness or dizziness.

- STOT-repeated exposure Based on available data, the classification criteria are not met.

- Aspiration hazard Based on available data, the classification criteria are not met.



12. Ecological information

Toxicity

- Aquatic toxicity:

Material - Not expected to be harmful to aquatic organisms.

Material - Expected to aquatic organisms probably show no chronic toxicity.

78-93-3 butanone

EC 50	2029 mg/l (alg) (96h/ Pseudokirchneriella subcapitata) 308 mg/l (Daphnia) (48h/ Daphnia magna)
LC 50	2993 mg/l (fi2) (Pimephales promelas)

- Persistence and degradability

It is expected that this substance is broken down quickly and it is completely biodegradable according to OECD guidelines. It is expected that this substance will be removed in a wastewater treatment plant.

• **Other information:** This substance is highly volatile and evaporates quickly into the air when it is released.

- **Bioaccumulative potential** A significant bioaccumulation is expected.

- **Mobility in soil** Product - Remains probably in the water or hiking through the floor.

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (Assessment by list): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

- **Results of PBT and vPvB assessment**

This material will not be persistent, not bioaccumulative and not considered to be toxic (PBT). This material will not be very persistent nor very bioaccumulating considered.

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13. Disposal considerations

- **Waste treatment methods**

- **Recommendation**

The product is suitable for burning in an enclosed, controlled burner suitable for fuel value or disposal by supervised incineration at very high temperatures at which it does not come to the formation of undesired inflammatory products. Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Disposal must be made according the local authority regulations. This material and / or its container must be disposed of as hazardous waste.

- **Waste disposal key number:**

European Waste Code: 08 XX XX

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

European waste catalogue

07 00 00	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 01 00	wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals
07 01 04*	other organic solvents, washing liquids and mother liquors

- **Uncleaned packagings:**

- **Recommendation:**

Contaminated packagings are to be treated as the contents. Redistributions uncleaned empty containers are the recipient must be warned of the possible threat. Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Packagings that cannot be cleaned are to be disposed of in the same manner as the product. Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not pressurize containers, cut, weld, braze, solder, drill, grind. Don not expose containers to heat, flames, sparks, static electricity or other flammable products. They may explode and cause injury or death.

14. Transport information

UN-Number	UN1193
- ADR, IMDG, IATA	
UN proper shipping name	1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE)
- ADR	ETHYL METHYL KETONE (METHYL ETHYL KETONE)
- IMDG, IATA	
Transport hazard class(es)	
- ADR	
- Class	3 (F1) Flammable liquids.
- Label	3
- IMDG, IATA	
- Class	3 Flammable liquids.
- Label	3
Packing group	
- ADR, IMDG, IATA	II
Environmental hazards:	
- Marine pollutant:	No
Special precautions for user	Warning: Flammable liquids.
- Kemler-Number:	33
- EMS-Number:	F-E,S-D
Transport in bulk according to Annex II of Marpol and the IBC Code	Substance name: METHYLETHYLKETON Ship type required: 3. Pollution category: Z
- Transport/Additional information:	
- ADR	
- Limited quantities (LQ)	1L
- Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
- Transport category	2
- Tunnel restriction code	D/E
- IMDG	
- Limited quantities (LQ)	1L
- Excepted quantities (EQ):	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
- UN „Model Regulation“:	UN1193, ETHYLMETHYLKETON (METHYLETHYLKETON), 3, II

15.1 Regulatory information

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

- **Designation according to EC guidelines:**
The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)
- **Signal word:** Danger



15.2 Regulatory information

- Danger instructions

- H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

- Safety instructions

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Explosion-proof electrical/ventilating/lighting equipment use.
P303+P361+P353 IF ON SKIN (or hair): Remove/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.
P405 Store locked up.
P501 Dispose of contents/container to local/regional/national/international regulations.

National regulations:

- **Water hazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.
- **Other regulations, limitations and prohibitive regulations**
AICS (AU); DSL (CA); ENCS - (JP); IECSC (CN); KECI - (KR); PICCS (Philippines); TSCA (US)
- **Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

16. Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Abbreviations and acronyms:

RID:	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO:	International Civil Aviation Organisation
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
IATA:	International Air Transport Association
GHS:	Globally Harmonised System of Classification and Labelling of Chemicals
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)
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent
Acute Tox. 4:	Acute toxicity, Hazard Category 4
Skin Irrit. 2:	Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2:	Serious eye damage/eye irritation, Hazard Category 2
Resp. Sens. 1:	Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1:	Sensitisation - Skin, Hazard Category 1
Carc. 2:	Carcinogenicity, Hazard Category 2
STOT SE 3:	Specific target organ toxicity - Single exposure, Hazard Category 3
STOT RE 2:	Specific target organ toxicity - Repeated exposure, Hazard Category 2