VALSYNTHESE

Material Safety Data Sheet
according to Regulation (EC) No. 1907/2006

ISOBUTYL NITRITE

Revision date	24.02.2025
Version	1
Replaces version from	-

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

1.1 Product identifier

Product name	Isobutyl nitrite
CAS-No.	542-56-3
EC-No.	208-819-7
Index-No.	007-017-00-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory chemicals, Manufacture of substances.

1.3 Details of the supplier of the safety data sheet

Name	Valsynthese SA
Factory address	Valsynthese SA Fabrikstrasse 48 PO Box 636 3900 Brig / Switzerland
Office address	Valsynthese SA Société Suisse des Explosifs Group PO Box 636 3900 Brig / Switzerland
Information Department	This number is available only during office hours. Phone +41 27 922 71 11 E-Mail (Responsible person): msds@explosif.ch
1.4 Emergency Phone Number	+41 27 922 71 11 (only during office hours) or Toxicological Information Centre in Switzerland: Tel. 145 or +41 (0) 44 251 51 51

2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids (Category 2), H225
Acute toxicity (Category 4), H302
Acute toxicity (Category 4), H332
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Hazard pictogram(s)

Signal word	Danger
Hazard statement(s)	
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
Precautionary statement(s)	
P202	Do not handle until all safety precautions have been read an understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P301+P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P304+P340+P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308+P313	IF exposed or concerned: Get medical advice/ attention.

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.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Toxicological information: The substance/mixture does not contain components

considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

3. Composition / Information on ingredients

3.1 Substance

Product name	Isobutyl nitrite
Molecular formula	$C_4H_9NO_2$
Molecular weight	103.12 g/mol
Cas-No.	542-56-3
EC-No.	208-819-7
Index-No.	007-017-00-2

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Isobutyl nitrite		
CAS-No. 542-56-3 EC-No. 208-819-7	Flam. Liq. 2; Acute Tox. 4; Acute Tox.4; Muta. 2; Carc. 1B; H225, H302; H332; H341; H350	<=100%

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16.

4. First-aid measures

4.1 Description of first aid measures

General advice	Show this material safety data sheet to the doctor in attendance.
If swallowed	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
If inhaled	After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
In case of skin contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
In case of eye contact	After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.Foam Carbon dioxide (CO2) Dry powder.
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given.For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides
Nitrogen oxides (NOx)
Combustible.
Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.

5.3 Advice for fire fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Additional information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and material for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For further and detailed information see section 8 and 13.

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage stability
Recommended storage temperature 2 - 8 °C

Storage class
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. Exposure controls / Personal protection

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

Personal protective equipment

Eye/face protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.
Skin protection	Splash protection Material: Nitrile rubber Minimum layer thickness: 0,4 mm Break through time: 40 min Material tested: Camatril® (KCL 730) source: KCL GmbH, D-36124 Eichenzell, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with

	the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.
Body Protection	Flame retardant antistatic protective clothing.
Respiratory protection	required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.
Environmental exposure controls	Do not let product enter drains. Risk of explosion.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	No data available
Odour	No data available
pH value	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	66 – 67°C
Flash point	-21 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Density	0,87 g/cm^3 at 25 °C
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	No data available

Oxidizing properties	none

9.2 Other information

No data available

10. Stability and reactivity

10.1 Reactivity

Vapors may form explosive mixture with air.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Avoid moisture.
Warming.

10.5 Incompatible materials

Oxidizing agents, Alcohols, Strong basesStrong oxidizing agents.

10.6 Hazardous decomposition products

In the event of fire: see section 5

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity	Oral: No data available Inhalation: No data available Dermal: No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Eye damage/irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	Presumed to have carcinogenic potential for humans.
Reproductive toxicity	No data available
STOT-single exposure	No data available
STOT-repeated exposure	No data available
Aspiration hazard	No data available

Additional information

Product (Assessment):
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

RTECS: RA0805000
Inhalation of vapors may cause:, Severe:, drop in blood pressure, Unconsciousness, Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated**.**

12. Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulation potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

Product (Assessment):
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.6 Other adverse effects

No data available

13. Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable

solutions to a licensed disposal company.

14. Transport information

14.1 UN Number

ADR/RID: 2351	IMDG: 2351	IATA: 2351

14.2 UN proper shipping name

ADR/RID:	IMDG:	IATA:
BUTYL NITRITES	BUTYL NITRITES	Butyl nitrites

14.3 Transport hazard class(es)

ADR/RID: 3	IMDG: 3	IATA: 3

14.4 Packing group

ADR/RID: II	IMDG: II	IATA: II

14.5 Environmental hazards

ADR/RID: no	IMDG Marine pollutant: no	IATA: no

14.6 Special precautions for user

Tunnel restriction code : (D/E)
Further information : No data available

15. Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) :	Isobutyl nitrite

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	P5c	FLAMMABLE LIQUIDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

16. Other information

16.1 Information regarding the revision of the safety data sheet

Data compared to the previous version altered.

16.2 Full text of H-Statements referred to under sections 2 and 3

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.

16.3 Additional information

The information contained herein is in conformity with EU Directive EC 1907/2006 and EC 1272/2008, and is believed to be accurate and represents the best information currently available to us on the date of publication. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Valsynthese SA be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Valsynthese SA has been advised of the possibility of such damages.