## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

| | | |
|---|---|---|
| Product name | : | Acetone |
| REACH No. | : | 01-2119471330-49-XXXX |
| CAS-No. | : | 67-64-1 |
| Index-No. | : | CH-L3-A004 |

### 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

| | |
|---|---|
| Company | VALERIAN LABS HOLDING CORP |
| Address | 1130-1971 BROADWAY STREETPORT<br>COQUITLAM, BC V3C 0C9 CANADA |
| Telephone | +1 (604)-710-0869 |
| E-mail: | info@valerianlabs.com |

### 1.4 Emergency telephone Number:

1-888-226-8832 CANUTEC (CANADA)
1-800-424-9300 CHEMTREC (USA)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**In accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)**

Flammable liquids (Category 2), H225

Eye irritation (Category 2), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H336

### 2.2 Label elements

**Labelling In accordance with GHS Standards**

| | |
|---|---|
| Pictogram |  |
| Signal Word | Danger |

Hazard statement(s)

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

Precautionary statement(s)

| | |
|---|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground and bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ ventilating/ lighting/ equipment. |
| P242 | Use non-sparking tools. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

Supplemental Hazard information (EU)

| | |
|---|---|
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

**Reduced Labeling (<= 125 ml)**

| | |
|---|---|
| Pictogram |  |
| Signal Word | Danger |
| Hazard statement(s) | none |
| Precautionary statement(s) | none |

Supplemental Hazard information (EU)

| | |
|---|---|
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

## 2.3 Other hazards

This substance or mixture does not include any components that are deemed persistent, bioaccumulative, and toxic (PBT), nor does it contain components considered very persistent and very bioaccumulative (vPvB) at concentrations 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.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : $C_3H_6O$
Molecular weight : 58,08 g/mol
CAS-No. : 67-64-1
EC-No. : 200-662-2
Index-No. : CH-L3-A004

| Component | | Classification | Concentration |
|---|---|---|---|
| **acetone** | | | |
| CAS-No.<br>EC-No.<br>Index-No. | 67-64-1<br>200-662-2<br>CH-L3-A004 | Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336<br>Concentration limits:<br>>= 20 %: STOT SE 3, H336; | <= 100 % |

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

## SECTION 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 inhaled**
After inhalation: fresh air. Call in physician.

**In case of skin contact**
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

**In case of eye contact**
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

**If swallowed**
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 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

## SECTION 5: Firefighting measures

**5.1 Extinguishing Media:**

- Suitable extinguishing media: Carbon dioxide (CO2), Foam, Dry powder
- Unsuitable extinguishing media: There are no specified limitations on extinguishing agents for this substance/mixture.

**5.2 Special Hazards from the Substance or Mixture:**

- Carbon oxides may be produced.
- Combustible substance.
- Be cautious of flashback.
- Vapors are denser than air and can spread along floors.
- There is a potential for the development of hazardous combustion gases or vapors in case of a fire.
- This substance can form explosive mixtures with air at ambient temperatures.

**5.3 Advice for Firefighters:**

- In the event of a fire, use self-contained breathing apparatus.

**5.4 Further Information:**

- Remove containers from the danger zone and cool them with water.
- Prevent fire extinguishing water from contaminating surface water or the groundwater system.

## SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substancecontact. Ensure adequate ventilation. Keep away from heat and sources of ignition.
Evacuate the danger area, observe emergency procedures, consult an expert.For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains. Risk of explosion.

**6.3 Methods and materials for containment and cleaning up**

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

**6.4 Reference to other sections**

For disposal see section 13.

## SECTION 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**

Change contaminated clothing. Preventive skin protection recommended. Wash hands 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.

**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

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Ingredients with workplace control parameters**

**Derived No Effect Level (DNEL)**

| Application Area | Routes of exposure | Health effect | Value |
|---|---|---|---|
| Workers | Skin contact | Long-term systemic effects | 186mg/kg BW/d |
| Consumers | Ingestion | Long-term systemic effects | 62mg/kg BW/d |
| Consumers | Skin contact | Long-term systemic effects | 62mg/kg BW/d |
| Workers | Inhalation | Acute systemic effects | 2420 mg/m3 |
| Workers | Inhalation | Long-term systemic effects | 1210 mg/m3 |
| Consumers | Inhalation | Long-term systemic effects | 200 mg/m3 |

**Predicted No Effect Concentration (PNEC)**

| Compartment | Value |
|---|---|
| Soil | 33,3 mg/kg |
| Sea water | 1,06 mg/l |
| Fresh water | 10,6 mg/l |
| Sea sediment | 3,04 mg/kg |
| Fresh water sediment | 30,4 mg/kg |
| Onsite sewage treatment plant | 100 mg/l |

### 8.2 Exposure controls

**Personal protective equipment**

**Eye/Face Protection:**

- Use eye protection equipment that has been tested and approved according to the relevant government standards, such as NIOSH (US) or EN 166 (EU). Safety glasses are recommended.

**Skin Protection:**

- This recommendation pertains specifically to the product specified in the safety data sheet provided by us and for its intended use. When mixing with other substances or used under conditions different from those outlined in EN374, take appropriate precautions.

**Body Protection:**

- Wear flame-retardant antistatic protective clothing.

**Respiratory Protection:**

- Respiratory protection is required when vapors/aerosols are generated.
- Follow our recommendations for filtering respiratory protection, which are based on standards like DIN EN 143, DIN 14387, and other associated standards for the chosen respiratory protection system.
- Use Filter type AX as the recommended filter type.
- Ensure that maintenance, cleaning, and testing of respiratory protective devices are conducted in accordance with the manufacturer's instructions and well-documented.

**Control of Environmental Exposure:**

- Prevent the product from entering drains, as there is a risk of explosion.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| a) | Physical state | clear, liquid |
| b) | Color | colorless |
| c) | Odor | pungent, weakly aromatic |
| d) | Melting point/freezing point | Melting point/range: -94 °C - lit. |
| e) | Initial boiling point and boiling range | 56 °C at 1.013 hPa - lit. |
| f) | Flammability (solid, gas) | No data available |
| g) | Upper/lower | Upper explosion limit: 13 %(V) |

| | | |
|---|---|---|
| | flammability or explosive limits | Lower explosion limit: 2 %(V) |
| h) | Flash point | -17,0 °C - closed cup |
| i) | Autoignition temperature | 465,0 °C |
| j) | Decomposition temperature | Distillable in an undecomposed state at normal pressure. |
| k) | pH | 5 - 6 at 395 g/l at 20 °C |
| l) | Viscosity | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) | Water solubility | soluble, in all proportions |
| n) | Partition coefficient: n-octanol/water | No data available |
| o) | Vapor pressure | 245,3 hPa at 20,0 °C |
| p) | Density | 0,791 g/cm3 at 25 °C - lit. |
| | Relative density | No data available |
| q) | Relative vapor density | No data available |
| r) | Particle characteristics | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | none |

**9.2 Other safety information**

| | |
|---|---|
| Conductivity | 0,01 µS/cm at 20 °C |
| Surface tension | 23,2 mN/m at 20,0 °C |

## SECTION 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**
Risk of ignition or formation of inflammable gases or vapours with:
chromosulfuric acid
chromyl chloride
ethanolamine
Fluorine
Strong oxidizing agents

strong reducing agents
Nitric acid
chromium(VI) oxide
Risk of explosion with:
nonmetallic oxyhalides
halogen-halogen compounds
Chloroform
nitrating acid
nitrosyl compounds
hydrogen peroxide
halogen oxides
organic nitro compounds
peroxi compounds
Exothermic reaction with:
Bromine
Alkali metals
alkali hydroxides
Halogenated hydrocarbon
Sulfur dichloride
phosphorous oxichloride

**10.4 Conditions to avoid**
Warming.

**10.5 Incompatible materials**
rubber, various plastics

**10.6 Hazardous decomposition products**
In the event of fire: see section 5

## SECTION 11: Toxicological information

**11.1 Information on toxicological effects**

**Acute toxicity**
LD50 Oral - Rat - female - 5.800 mg/kg
Remarks: (ECHA)
LC50 Inhalation - Rat - 4 h - 76 mg/l - vapor

Remarks: Unconsciousness
Drowsiness
Dizziness
(External MSDS)
LD50 Dermal - Rabbit - 20.000 mg/kg
Remarks: (IUCLID)

**Skin corrosion/irritation**
Skin - Rabbit
Result: Mild skin irritation - 24 h
(Draize Test)
Remarks: (RTECS)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: Eye irritation - 24 h
(Draize Test)
Remarks: (RTECS)

**Respiratory or skin sensitization**
Maximization Test - Guinea pig
Result: Not a skin sensitizer.
Remarks: (ECHA)
Chronic exposure may cause dermatitis.

**Germ cell mutagenicity**
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: Mouse lymphoma test
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 476
Result: negative

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Inhalation - May cause drowsiness or dizziness. - Narcotic effects

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**11.2 Additional Information**

**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. |

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**After absorption:**

Headache
Salivation
Nausea
Vomiting
Dizziness
narcosis
Coma

**Other dangerous properties can not be excluded:**

Handle in accordance with good industrial hygiene and safety practice.

Kidney - Irregularities - Based on Human Evidence

Skin - Dermatitis - Based on Human Evidence

## SECTION 12: Ecological information

### 12.1 Toxicity

| | |
|---|---|
| Toxicity to fish | flow-through test LC50 - Pimephales promelas (fathead minnow) - 6.210 mg/l - 96 h<br>(OECD Test Guideline 203) |
| Toxicity to daphnia and other aquatic invertebrates | static test LC50 - Daphnia pulex (Water flea) - 8.800 mg/l - 48 h<br>Remarks: (ECHA) |
| Toxicity to algae | static test NOEC - Aeruginosa - 530 mg/l - 8 d<br>(DIN 38412)<br>Remarks: (maximum permissible toxic concentration)<br>(IUCLID) |
| Toxicity to bacteria | static test EC50 - activated sludge - 61,15 mg/l - 30 min<br>(OECD Test Guideline 209) |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | flow-through test NOEC - Daphnia magna (Water flea) - 2.212 mg/l - 28 d<br>Remarks: (ECHA) |

### 12.2 Persistence and degradability

| | |
|---|---|
| Biodegradability | aerobic - Exposure time 28 d<br>Result: 91 % - Readily biodegradable.<br>(OECD Test Guideline 301B) |
| Biochemical Oxygen | 1.850 mg/g |

| | |
|---|---|
| Demand (BOD) | Remarks: (IUCLID) |
| Chemical Oxygen Demand (COD) | 2.070 mg/g<br>Remarks: (IUCLID) |
| Theoretical oxygen demand | 2.200 mg/g<br>Remarks: (Lit.) |

**12.3 Bio accumulative potential**
Does not bioaccumulate.

**12.4 Mobility in soil**
No data available

**12.5 Results of PBT and vPvB 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 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.

**12.7 Other adverse effects**

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods**
No data available

## SECTION 14: Transport information

**14.1 UN number**
ADR/RID: 1090 IMDG: 1090 IATA: 1090

**14.2 UN proper shipping name**
ADR/RID: ACETONE
IMDG: ACETONE
IATA: Acetone

**14.3 Transport hazard class(es)**
ADR/RID: 3 IMDG: 3 IATA: 3

**14.4 Packaging 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

## SECTION 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**

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors : acetone

**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**

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

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

**Full text of other abbreviations**

These are abbreviations and acronyms commonly used in the field of chemical safety, regulation, and transportation:

1. ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
2. ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
3. AIIC - Australian Inventory of Industrial Chemicals
4. ASTM - American Society for the Testing of Materials
5. bw - Body weight
6. CMR - Carcinogen, Mutagen, or Reproductive Toxicant
7. DIN - Standard of the German Institute for Standardization
8. DSL - Domestic Substances List (Canada)
9. ECx - Concentration associated with x% response
10. ELx - Loading rate associated with x% response
11. EmS - Emergency Schedule

12. ENCS - Existing and New Chemical Substances (Japan)
13. ErCx - Concentration associated with x% growth rate response
14. GHS - Globally Harmonized System
15. GLP - Good Laboratory Practice
16. IARC - International Agency for Research on Cancer
17. IATA - International Air Transport Association
18. IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
19. IC50 - Half maximal inhibitory concentration
20. ICAO - International Civil Aviation Organization
21. IECSC - Inventory of Existing Chemical Substances in China
22. IMDG - International Maritime Dangerous Goods
23. IMO - International Maritime Organization
24. ISHL - Industrial Safety and Health Law (Japan)
25. ISO - International Organization for Standardization
26. KECI - Korea Existing Chemicals Inventory
27. LC50 - Lethal Concentration to 50% of a test population
28. LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
29. MARPOL - International Convention for the Prevention of Pollution from Ships
30. n.o.s. - Not Otherwise Specified
31. NO(A)EC - No Observed (Adverse) Effect Concentration
32. NO(A)EL - No Observed (Adverse) Effect Level
33. NOELR - No Observable Effect Loading Rate
34. NZIoC - New Zealand Inventory of Chemicals
35. OECD - Organization for Economic Co-operation and Development
36. OPPTS - Office of Chemical Safety and Pollution Prevention
37. PBT - Persistent, Bio accumulative, and Toxic substance
38. PICCS - Philippines Inventory of Chemicals and Chemical Substances
39. (Q)SAR - (Quantitative) Structure Activity Relationship
40. REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals
41. RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
42. SADT - Self-Accelerating Decomposition Temperature
43. SDS - Safety Data Sheet
44. TCSI - Taiwan Chemical Substance Inventory

45. TECI - Thailand Existing Chemicals Inventory
46. TSCA - Toxic Substances Control Act (United States)
47. UN - United Nations
48. UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods
49. vPvB - Very Persistent and Very Bio accumulative

**Additional information**

The provided information is considered accurate but is not intended to cover every aspect and should be regarded as a general reference. The content in this document is derived from our current understanding and is relevant to the product concerning the necessary safety measures.