



Safety Data Sheet - Version 5.0

Preparation Date 9/8/2015

Latest Revision Date (If Revised)

SDS Expiry Date 9/6/2018

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Chemical Name Acetone-¹³C₃

Catalogue # A163803

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Uses To be used only for scientific research and development. Not for use in humans or animals.

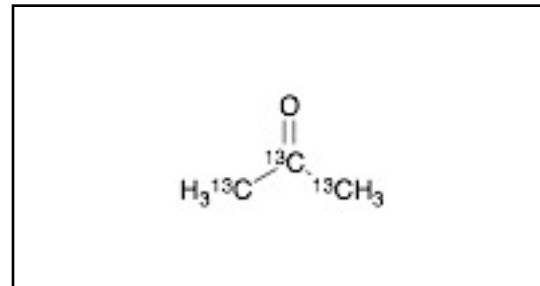
1.3 Details of the Supplier of the Safety Data Sheet

Company Toronto Research Chemicals
2 Brisbane Road
Toronto, ON M3J 2J8
CANADA

Telephone +14166659696

FAX +14166654439

Email orders@trc-canada.com



1.4 Emergency Telephone Number

Emergency# +14166659696 between 0800-1700 (GMT-5)

2. HAZARDS IDENTIFICATION

WHMIS Classification (Canada)

B2 Flammable Liquid

D2B Toxic Material Causing Other Toxic Effects
Severe Respiratory Irritant
Moderate Eye Irritant

WHMIS Symbols (Canada)



2.1/2.2 Classification of the Substance or Mixture and Label Elements

GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Flammable Liquids (Category 2)

Skin Irritation (Category 3)

Serious Eye Irritation (Category 2A)

Specific Target Organ Toxicity, Single Exposure; Central nervous system (Category 3)

EU Classification (According to EU Regulation 67/548/EEC)

Flammable. Irritating to eyes and skin.

EU Risk and Safety Statements (According to EU Regulation 67/548/EEC)

Hazard Statements

Highly Flammable

Irritant

Hazard Codes

F

Xi



Risk Codes and Phrases

R10 Flammable.

R36/38 Irritating to eyes and skin.

Safety Precaution Codes and Phrases

- S15 Keep away from heat.
S22 Do not breathe dust.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

GHS Hazards Identification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Signal Word Danger



GHS Hazard Statements

- H225 Highly flammable liquid and vapour.
H316 Causes mild skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

GHS Precautionary Statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P305/P351/P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3 Unclassified Hazards/Hazards Not Otherwise Classified

No data available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Molecular Formula: $^{13}\text{C}_3\text{H}_6\text{O}$

Molecular Weight: 61.06

CAS Registry #: 93628-01-4

EC#: 200-662-2

Synonyms

2-Propanone-1,2,3- $^{13}\text{C}_3$

3.2 Mixtures

Not a mixture.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice

If medical attention is required, show this safety data sheet to the doctor.

If Inhaled

If inhaled, move person to fresh air. If not breathing, give artificial respiration and consult a physician.

In Case of Skin Contact

Wash affected area with soap and water. Consult a physician if any exposure symptoms are observed.

In Case of Eye Contact

Immediately rinse eyes with plenty of water for at least 15 minutes. Consult a physician.

If Swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Seek medical attention.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

The most important known symptoms and effects are described in the labeling (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

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No Smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from chemical

Flash back possible over considerable distance. Container explosion may occur under fire conditions.

5.2 Special Hazards Arising from the Substance or Mixture

Carbon oxides

5.3 Advice for Firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further Information

No data available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Use recommended personal protective equipment (see Section 8). Adequate ventilation must be provided to ensure vapours or mists are not inhaled. Vapours are heavier than air and may accumulate in low areas. All sources of ignition, including sources of static discharge, must be removed from area.

6.2 Environmental Precautions

Material should not be allowed to enter the environment. Prevent further spillage or discharge into drains, if safe to do so.

6.3 Methods and Materials for Containment and Cleaning Up

Contain the spill and then collect using non-combustible absorbent material (such as clay, diatomaceous earth, vermiculite or other appropriate material). Place material in a suitable, sealable container and then dispose according to local/national regulations and guidance (see Section 13).

6.4 Reference to Other Sections

For protective equipment, refer to Section 8. For disposal, see Section 13.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact with skin and eyes. Ventilation and proper handling are to be used to prevent the formation of vapours and mists. Remove all sources of ignition and take precautionary measures to prevent the buildup of electrostatic discharge (ground and bond containers as appropriate). No smoking, eating or drinking around this material. Wash hands after use.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Ensure container is kept securely closed before and after use. Keep in a well ventilated area and do not store with strong oxidizers or other incompatible materials (see Section 10).

Storage conditions: Refrigerator

7.3 Specific End Uses

For scientific research and development only. Not for use in humans or animals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Components	CAS-No.	Value	Control parameters	Basis
Acetone	67-64-1	TWA	250 ppm	Canada. British Columbia OEL
		STEL	500 ppm	Canada. British Columbia OEL
		TWAEV	500 ppm	Canada. Ontario OELs
		STEV	750 ppm	Canada. Ontario OELs
		TWA	500 ppm 1200 mg/m3	Canada. Alberta, Occupational Health and Safety

		Code (table 2: OEL)
STEL	750 ppm 1200 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
TWAEV	500 ppm 1190 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
STEV	1000 ppm 2380 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
TWA	750 ppm 1800 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
TWA	500 ppm	USA. ACGIH Threshold Limit Values (TLV)
STEL	750 ppm	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure Controls

Appropriate Engineering Controls

A laboratory fumehood or other appropriate form of local exhaust ventilation should be used to avoid exposure.

Personal Protective Equipment

All recommendations below are advisory in nature and a risk assessment should be performed by the employer/end user prior to use of this product. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

Eye/Face Protection

Safety glasses or safety goggles. All equipment should have been tested and approved under appropriate standards, such as NIOSH (US), CSA (Canada), or EN 166 (EU).

Skin Protection

Gloves should be used when handling this material. Gloves are to be inspected prior to use. Contaminated gloves are to be removed using proper glove removal technique so that the outer surface of the glove does not contact bare skin. Dispose of contaminated gloves after use in compliance with good laboratory practices and local requirements.

Gloves used for incidental exposures (splash protection) should be designated as "low chemical resistant" or "waterproof" by EU standard EN 374. Unrated gloves are not recommended.

Suggested gloves: AnsellPro nitrile gloves style 92-500 or 92-600, 5 mil thickness.

Penetration time has not been determined.

Gloves used for prolonged direct exposure (immersion) should be designated "chemical resistant" as per EN 734 with the resistance codes corresponding to the anticipated use of the material.

Suggested gloves: AnsellPro Viton/Butyl gloves style 38-612, 4/8 mil thickness.

Penetration time has not been determined.

These recommendations may not apply if the material is mixed with any other chemical, or dissolved into a solution. A risk assessment must be performed to ensure the gloves will still offer acceptable protection.

Body Protection

Fire resistant (Nomex) lab coat or coveralls.

Respiratory Protection

Recommended respirators are NIOSH-approved OV/Multi-Gas/P95 or CEN-approved ABEK-P2 respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face supplied air respirator must be used.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

A) Appearance

Clear Colorless Liquid

B) Odour

No data available.

C) Odour Threshold

No data available.

E) Melting Point/Freezing Point

N/A

G) Flash point

-16.99 °C (1.42 °F) - closed cup

I) Flammability (Solid/Gas)

No data available.

K) Vapour Pressure

245.3 hPa (184.0 mmHg) at 20.0 °C (68.0 °F)

M) Relative Density

No data available.

O) Partition Coefficient: n-octanol/water

log Pow: -0.24

Q) Decomposition Temperature

No data available.

S) Explosive Properties

No data available.

D) pH

No data available.

F) Initial Boiling Point/Boiling Range

No data available.

H) Evaporation Rate

No data available.

J) Upper/Lower Flammability/Explosive Limits

Lower: 2%(V) Upper: 13%(V)

L) Vapour Density

No data available.

N) Solubility

All Organic Solvents

P) Auto-Ignition Temperature

465.0 °C (869.0 °F)

R) Viscosity

No data available.

T) Oxidizing Properties

No data available.

9.2 Other Information

no data available

10. STABILITY AND REACTIVITY**10.1 Reactivity**

No data available.

10.2 Chemical Stability

Stable under recommended storage conditions.

10.3 Possibility of Hazardous Reactions

Vapours may form explosive mixture with air.

10.4 Conditions to Avoid

Heat, flames and sparks.

10.5 Incompatible Materials

Bases, Oxidizing agents, Reducing agents, Acetone reacts violently with phosphorous oxychloride.

10.6 Hazardous Decomposition Products**Other decomposition products:** No data available. In the event of fire: see section 5.**11. TOXICOLOGICAL INFORMATION****11.1 Information on Toxicological Effects****A) Acute Toxicity****Oral LD50:** Rat - 5800 mg/kg**Inhalation LC50:** Rat - 8 h - 50100 mg/m3**Dermal LD50:** Guinea pig - 7426 mg/kg**B) Skin Corrosion/Irritation**

Moderate skin irritant.

C) Serious Eye Damage/Irritation

Moderate eye irritant.

D) Respiratory or Skin Sensitization

No data available

E) Germ Cell Mutagenicity

No data available

F) Carcinogenicity

No data available

G) Reproductive Toxicity/Teratogenicity

No data available

H) Single Target Organ Toxicity - Single Exposure

Mild respiratory tract irritation.

I) Single Target Organ Toxicity - Repeated Exposure

No data available

J) Aspiration Hazard

No data available

K) Potential Health Effects and Routes of Exposure

Inhalation

May be harmful if inhaled. Material is extremely destructive to the mucous membranes and respiratory tract.

Ingestion

May be harmful if swallowed.

Skin

May be harmful if absorbed through skin. Causes skin irritation.

Eyes

Causes eye irritation.

L) Signs and Symptoms of Exposure

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

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

M) Additional Information

RTECS: AL3150000

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish:

LC50 - Oncorhynchus mykiss (rainbow trout) - 5,540 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates:

LC50 - Daphnia magna (Water flea) - 8,800 mg/l - 48 h

12.2 Persistence and Degradability

Result: 91 % - Readily biodegradable. Method: OECD Test Guideline 301B

12.3 Bioaccumulative Potential

Does not bioaccumulate.

12.4 Mobility in Soil

No data available.

12.5 Results of PBT and vPvB Assessment

No data available.

12.6 Other Adverse Effects

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

A) Product

Product may be burned in an incinerator equipped with afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Ensure that all Federal and Local regulations regarding the disposal and destruction of this material are followed.

B) Contaminated Packaging

Dispose of as above.

C) Other Considerations

Product is not to be disposed of in sanitary sewers, storm sewers, or landfills.

14. TRANSPORT INFORMATION

14.1 UN Number

DOT (US): UN1090

IATA: UN1090

IMDG: UN1090

ADR/RID: UN1090

14.2 UN Proper Shipping Name

DOT (US)/IATA:

Acetone-¹³C₃

IMDG/ARD/RID:

Acetone-¹³C₃

14.3 Transport Hazard Class(es)

DOT (US): 3 IATA: 3 IMDG: 3 ADR/RID: 3

14.4 Packing Group

DOT (US): II IATA: II IMDG: II ADR/RID: II

14.5 Environmental Hazards

DOT (US): None IATA: None IMDG: None ADR/RID: None

14.6 Special Precautions for User

None

15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of WHMIS (Canada), OSHA 1910.1200 (US), and EU Regulation EC No. 1907/2006 (European Union).

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture**A) Canada****DSL/NDSL Status:** This product or a component of this product is registered on the Canadian DSL/NDSL.**B) United States****TSCA Status:** This product or a component is listed on the US EPA TSCA.**C) European Union****ECHA Status:** This product or a component is registered with the EU ECHA.**15.2 Chemical Safety Assessment**

No data available

16. OTHER INFORMATION**16.1 Revision History**

Original Publication Date: 9/8/2015

16.2 List of Abbreviations

LD50	Median lethal dose of a substance required to kill 50% of a test population.
LC50	Medial lethal concentration of a substance required to kill 50% of a test population.
LDLo	Lowest known lethal dose
TDLo	Lowest known toxic dose
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances

16.3 Further Information

Copyright 2015. Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.