

SAFETY DATA SHEET

Supreme Decree 57 of 2019, Regulation on Classification, Labeling, and Notification of Hazardous Chemicals and Mixtures

Acetone

Version 6.2

Revision Date 05/09/2024

Print Date 05/16/2024

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

1.1 Product identifier

Product name : Acetone

Product code : S1212, S1260, U8903

CAS-No. : 67-64-1

Synonyms : Dimethyl Ketone, propan-2-one, 2-Propanone

1.2 Identified relevant uses of the substance or mixture and restrictions on use

Recommended use of the chemical and restrictions on use

Recommended use : Industrial Solvent.

Restrictions on use : Restricted to professional users.
This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell CAPSA**
Av. Roque Saenz Peña 788
Buenos Aires, 1383
Argentina

Telephone : (+54 11) 4130-2168

Telefax : (+54 11) 4130-2180

1.4 Emergency telephone number

Emergency telephone number : En Argentina: (+11 15) 4970-7391 / 4970-7390 / 5062-6601 / 4973-7368; Desde el exterior: (+54 911) 4970-7391 / 4970-7390 / 5062/6601

2. Hazard or hazards identification

2.1 Classification of the substance or mixture

GHS Classification

Flammable liquids : Category 2

Eye irritation : Category 2

Specific target organ toxicity - single exposure : Category 3

GHS Label elements, including precautionary statements

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2.2 Label elements

2.3 Other hazards

Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Exposure may enhance the toxicity of other materials. Repeated exposure may cause skin dryness or cracking. Slightly irritating to respiratory system.

3. Composition/information on ingredients

Substance / Mixture : Substance

3.1 Substances

IUPAC Name : 2-Propanone

Synonyms : Dimethyl Ketone, propan-2-one, 2-Propanone
CAS-No. : 67-64-1

UN number : 1090

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	GHS Classification	Concentration (% w/w%)
acetone	67-64-1	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336	<= 100
Benzene	71-43-2	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Muta. 1B; H340 Carc. 1A; H350 STOT RE 1; H372 Aquatic Chronic 3; H412	<= 0,003

For explanation of abbreviations see section 16.

4. First Aid measures

4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal conditions.

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- | | |
|-------------------------|--|
| If inhaled | : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment. |
| In case of skin contact | : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. |
| In case of eye contact | : Immediately flush eye(s) with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Transport to the nearest medical facility for additional treatment. |
| If swallowed | : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing. |

4.2 Protection of first-aiders

- | | |
|----------------------------|---|
| Protection of first-aiders | : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings. |
|----------------------------|---|

4.3 Most important symptoms and effects, both acute and delayed

- | | |
|---|--|
| Most important symptoms and effects, both acute and delayed | : Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
No specific hazards under normal use conditions.
Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.
Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance. |
| Notes to physician | : Treat symptomatically.
IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!
Call a doctor or poison control center for guidance.
Potential for chemical pneumonitis. |

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5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : None

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Carbon monoxide may be evolved if incomplete combustion occurs.

5.3 Recommendations for fire-fighters

Specific extinguishing methods : Standard procedure for chemical fires.
Clear fire area of all non-emergency personnel.
Keep adjacent containers cool by spraying with water.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Observe the relevant local and international regulations
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
Local authorities should be advised if significant spillages cannot be contained.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Vapour may form an explosive mixture with air.
Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Stay upwind and keep out of low areas.

6.2 Environmental precautions

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- Environmental precautions : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Ventilate contaminated area thoroughly.
Monitor area with combustible gas indicator.

6.3 Methods and material for containment and cleaning up

- Methods and materials for containment and cleaning up : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet.,
For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

7. Handling and storage

7.1 Precautions for safe handling

- General Precautions : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Ensure that all local regulations regarding handling and storage facilities are followed.
- Advice on safe handling : Avoid contact with skin, eyes and clothing.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Bulk storage tanks should be diked (bunded).

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Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.

Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk.

The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable.

Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Do NOT use compressed air for filling, discharging, or handling operations.

Avoidance of contact : Strong oxidising agents.

Product Transfer : Refer to guidance under Handling section.

7.2 Conditions for safe storage, including any incompatibilities

Conditions for safe storage : The vapour is heavier than air. Beware of accumulation in pits and confined spaces.
Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel.
Unsuitable material: Natural, butyl, neoprene or nitrile rubbers.

Container Advice : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

7.3 Specific end use(s)

Specific use(s) : Industrial Solvent.

Uses advised against : Restricted to professional users.
This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

8. Exposure controls and personal protection

8.1 Control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
acetone	67-64-1	LPT	750 ppm 1.782 mg/m3	CL OEL
Further information: Substances classified as 'A.4' are under consideration but have not yet valid information to be classified as				

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	carcinogenic to humans or laboratory animals, so the exposure of workers to them should be maintained at the lowest possible level.			
		LPP	438 ppm 1.040 mg/m3	CL OEL
	Further information: Substances classified as 'A.4' are under consideration but have not yet valid information to be classified as carcinogenic to humans or laboratory animals, so the exposure of workers to them should be maintained at the lowest possible level.			
Benzene	71-43-2	TWA	0,25 ppm 0,8 mg/m3	Shell Internal Standard (SIS) for 8-12 hour TWA.
Benzene		STEL	2,5 ppm 8 mg/m3	Shell Internal Standard (SIS) for 15 min (STEL)
Benzene	71-43-2	STEL	2,5 ppm	ACGIH
Benzene	71-43-2	LPP	1 ppm 2,7 mg/m3	CL OEL
	Further information: Skin, Substances classified as 'A.1' are known to be carcinogenic to man			
		LPT	5 ppm 15 mg/m3	CL OEL
	Further information: Skin, Substances classified as 'A.1' are known to be carcinogenic to man			

Biological occupational exposure limits

Component	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
acetone	67-64-1	Acetone	Urine	At the end of the work week, End of shift	30000.micro grams per 100 milliliters	CL BEI
Benzene	71-43-2	t,t-muconic acid	Urine	End of shift	0.5.mg/g creatinine	CL BEI

8.2 Exposure controls

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods
<http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods
<http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances

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<http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany

<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures

: Use sealed systems as far as possible.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Eye washes and showers for emergency use.
Firewater monitors and deluge systems are recommended.
Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances.
Appropriate measures include:

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.
Practice good housekeeping.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.

Personal protective equipment

Protective measures

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory protection

: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

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If air-filtering respirators are suitable for conditions of use:
Select a filter suitable for organic gases and vapours [Type AX
boiling point $\leq 65^{\circ}\text{C}$ (149°F)].

Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: butyl-rubber Gloves For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Eye protection

: Wear goggles for use against liquids and gas.
Wear full face shield if splashes are likely to occur.

Skin and body protection

: Skin protection not ordinarily required beyond standard issue work clothes.
It is good practice to wear chemical resistant gloves.

Thermal hazards

: Not applicable

Environmental exposure controls

General advice

: Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.
Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.
Information on accidental release measures are to be found in section 6.

9. Physical and chemical properties

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9.1 Information on basic physical and chemical properties

Appearance	: Liquid.
Colour	: clear
Odour	: characteristic
Odour Threshold	: Data not available
pH	: Not applicable
Melting / freezing point	: -94 °C / -137 °F
Boiling point, initial boiling point and boiling range	: 56 °C / 133 °F
Flash point	: -18 °C / -0,40 °F Method: IP 170
Evaporation rate	: 5,6 Method: ASTM D 3539, nBuAc=1 2 Method: DIN 53170, di-ethyl ether=1
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: ca. 13 %(V)
Lower explosion limit	: ca. 2,1 %(V)
Vapour pressure	: 24,7 kPa (20 °C / 68 °F)
Relative vapour density	: 2 (20 °C / 68 °F)
Relative density	: 0,792 (15 °C / 59 °F) Method: ASTM D4052
Density	: 790 - 792 kg/m3 (20 °C / 68 °F) Method: ASTM D4052
Solubility(ies)	
Water solubility	: Completely miscible. (20 °C / 68 °F)
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: log Pow: 0,2

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Auto-ignition temperature : 540 °C / 1004 °F
Method: ASTM D-2155

Decomposition temperature : Data not available

Viscosity

Viscosity, dynamic : 0,33 mPa.s (20 °C / 68 °F)
Method: ASTM D445

Viscosity, kinematic : Data not available

Particle characteristics
Particle size : Data not available

9.2 Other information

Explosive properties : Not applicable

Oxidizing properties : Data not available

Surface tension : 22,8 mN/m

Conductivity : Electrical conductivity: > 10,000 pS/m
A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid, This material is not expected to be a static accumulator.

Molecular weight : 58,08 g/mol

10. Stability and reactivity

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

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10.4 Conditions to avoid

Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources.
Prevent vapour accumulation.
In certain circumstances product can ignite due to static electricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

: Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

11. Toxicological information

11.1 Information on toxicological effects

Basis for assessment : Information given is based on product testing.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Acute toxicity

Components:

acetone:

Acute oral toxicity : LD 50 Rat, female: > 5.000 mg/kg
Method: Literature data
Remarks: Based on available data, the classification criteria are not met.

Acute inhalation toxicity : LC 50 Rat, female: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Literature data
Remarks: Based on available data, the classification criteria are not met.
High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

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Acute dermal toxicity : LD 50 Rabbit, male and female: > 5.000 mg/kg
Method: Literature data
Remarks: Based on available data, the classification criteria are not met.

Benzene:

Acute oral toxicity : LD 50 Rat, male: > 2.000 mg/kg
Method: Test(s) equivalent or similar to OECD Test Guideline 401
Remarks: Based on available data, the classification criteria are not met.

Acute inhalation toxicity : LC 50 Rat, female: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Test(s) equivalent or similar to OECD Test Guideline 403
Remarks: Based on available data, the classification criteria are not met.
High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

Acute dermal toxicity : LD 50 Rabbit: > 2.000 mg/kg
Method: Test(s) equivalent or similar to OECD Test Guideline 402
Remarks: Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Components:

acetone:

Species: Rabbit

Method: Literature data

Remarks: Based on available data, the classification criteria are not met., Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Benzene:

Species: Rabbit

Method: OECD Test Guideline 404

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Components:

acetone:

Species: Rabbit

Method: Test(s) equivalent or similar to OECD Test Guideline 405

Remarks: Causes serious eye irritation.

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Benzene:

Species: Rabbit

Method: Literature data

Remarks: Causes serious eye irritation.

Respiratory or skin sensitisation

Components:

acetone:

Species: Guinea pig

Method: Literature data

Remarks: Based on available data, the classification criteria are not met.

Benzene:

Species: Mouse

Method: Literature data

Remarks: Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Components:

acetone:

Method: Test(s) equivalent or similar to OECD Guideline 471

Remarks: Based on available data, the classification criteria are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline 473

Remarks: Based on available data, the classification criteria are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline 476

Remarks: Based on available data, the classification criteria are not met.

Test species: MouseMethod: Literature data

Remarks: Based on available data, the classification criteria are not met.

Test species: HamsterMethod: Literature data

Remarks: Based on available data, the classification criteria are not met.

Germ cell mutagenicity-
Assessment

: This product does not meet the criteria for classification in categories 1A/1B.

Benzene:

Method: OECD Test Guideline 471

Remarks: May cause genetic defects.

Method: Other guideline method.

Remarks: May cause genetic defects.

Method: Literature data

Remarks: May cause genetic defects.

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Test species: Mouse
Method: Test(s) equivalent or similar to OECD Test Guideline 474

Remarks: May cause genetic defects.

Germ cell mutagenicity-
Assessment

: May cause genetic defects.

Carcinogenicity

Components:

acetone:

Species: Mouse, (female)

Application Route: Dermal

Method: Literature data

Remarks: Based on available data, the classification criteria are not met.

Carcinogenicity -
Assessment

: This product does not meet the criteria for classification in categories 1A/1B.

Benzene:

Species: Rat, (male and female)

Application Route: Oral

Method: Other guideline method.

Remarks: May cause cancer., Known human carcinogen., May cause leukaemia (AML - acute myelogenous leukaemia).

Species: Mouse, (male and female)

Application Route: Inhalation

Method: Literature data

Remarks: May cause cancer., Known human carcinogen., May cause leukaemia (AML - acute myelogenous leukaemia).

Carcinogenicity -
Assessment

: May cause cancer.

Material	GHS/CLP Carcinogenicity Classification
acetone	No carcinogenicity classification.
Benzene	Carcinogenicity Category 1A

Material	Other Carcinogenicity Classification
Benzene	IARC: Group 1: Carcinogenic to humans

Reproductive toxicity

Components:

acetone:

Species: Rat

Sex: male

Application Route: Oral

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Method: Acceptable non-standard method.

Remarks: Based on available data, the classification criteria are not met.

Effects on foetal development

: Species: Mouse, female
Application Route: Inhalation
Method: Test(s) equivalent or similar to OECD Test Guideline 414
Remarks: Based on available data, the classification criteria are not met.

Reproductive toxicity - Assessment

: This product does not meet the criteria for classification in categories 1A/1B.

Benzene:

Species: Rat
Sex: male and female
Application Route: Inhalation

Method: Test(s) equivalent or similar to OECD Test Guideline 415.

Remarks: Based on available data, the classification criteria are not met.

Species: Rat, female
Application Route: Inhalation
Method: Test(s) equivalent or similar to OECD Test Guideline 414
Remarks: Based on available data, the classification criteria are not met., Causes foetotoxicity in animals at doses which are maternally toxic.

Reproductive toxicity - Assessment

: This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Components:

acetone:

Exposure routes: Inhalation

Target Organs: Central nervous system

Remarks: May cause drowsiness or dizziness.

Benzene:

Remarks: Based on available data, the classification criteria are not met., Inhalation of vapours or mists may cause irritation to the respiratory system.

STOT - repeated exposure

Components:

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acetone:

Remarks: Based on available data, the classification criteria are not met., Exposure may enhance the toxicity of other materials., May potentiate the peripheral neurotoxicity of n-hexane, and the liver and kidney toxicity of some chlorinated hydrocarbons such as Tetra chloro hydrocarbon.

Benzene:

Exposure routes: Oral, Inhalation

Target Organs: hematopoietic system

Remarks: Causes damage to organs through prolonged or repeated exposure., Blood-forming organs: repeated exposure affects the bone marrow., Blood: may cause haemolysis of red blood cells and/or anaemia., Immune System: animal studies on this material or its components have demonstrated immunotoxicity., May cause MDS (Myelodysplastic Syndrome)., Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest., Myelodysplastic syndrome (MDS) was observed in individuals exposed to very high levels (50 ppm to 300 ppm range) of benzene over a long period of time in the workplace. The relevance of these results to lower levels of exposure is not known.

Repeated dose toxicity

Components:

acetone:

Rat, male and female:

Application Route: Oral

Method: Test(s) equivalent or similar to OECD Test Guideline 408

Target Organs: No specific target organs noted

Rat, male:

Application Route: Inhalation

Test atmosphere: vapour

Method: Literature data

Target Organs: No specific target organs noted

Benzene:

Rat, male and female:

Application Route: Oral

Method: Test(s) equivalent or similar to OECD Test Guideline 408

Target Organs: hematopoietic system

Mouse, male and female:

Application Route: Inhalation

Test atmosphere: vapour

Method: Literature data

Target Organs: hematopoietic system

Aspiration toxicity

11.2 Information on other hazards

Components:

acetone:

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

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Benzene:

May be fatal if swallowed and enters airways.

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Further information

Components:

acetone:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

Benzene:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

12. Ecological information

Basis for assessment : Ecotoxicological data are based on product testing.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

12.1 Toxicity

Components:

acetone :

Toxicity to fish (Acute toxicity) : LC50 (Pimephales promelas (fathead minnow)): 6.210 mg/l
Exposure time: 96 h
Method: Test(s) equivalent or similar to OECD Guideline 203
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to crustacean (Acute toxicity) : LC50 (Daphnia pulex (Water flea)): 8.800 mg/l
Exposure time: 48 h
Method: Other guideline method.
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae/aquatic plants (Acute toxicity) : NOEC (Microcystis aeruginosa (blue-green algae)): 530 mg/l
Exposure time: 192 h
Method: Other guideline method.

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Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

- Toxicity to microorganisms (Acute toxicity) : EC50 : 61.150 mg/l
Exposure time: 0,5 h
Method: Other guideline method.
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l
- Toxicity to fish (Chronic toxicity) : Remarks: Data not available
- Toxicity to crustacean(Chronic toxicity) : NOEC: 2.212 mg/l
Exposure time: 28 d
Species: Daphnia magna (Water flea)
Method: Test(s) equivalent or similar to OECD Guideline 211
Remarks: NOEC/NOEL > 100 mg/l

Benzene :

- Toxicity to fish (Acute toxicity) : LC50 (Oncorhynchus mykiss (rainbow trout)): 5,3 mg/l
Exposure time: 96 h
Method: Test(s) equivalent or similar to OECD Guideline 203
Remarks: Toxic
LL/EL/IL50 > 1 <= 10 mg/l
- Toxicity to crustacean (Acute toxicity) : EC50 (Daphnia magna (Water flea)): 10 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Toxic
LL/EL/IL50 > 1 <= 10 mg/l
- Toxicity to algae/aquatic plants (Acute toxicity) : ErC50 (Selenastrum capricornutum (green algae)): 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Harmful
LL/EL/IL50 >10 <= 100 mg/l
- Toxicity to microorganisms (Acute toxicity) : IC50 (Nitrosomonas): 13 mg/l
Exposure time: 24 h
Method: Literature data.
Remarks: Harmful
LL/EL/IL50 >10 <= 100 mg/l
- Toxicity to fish (Chronic toxicity) : NOEC: 0,8 mg/l
Exposure time: 32 d
Species: Pimephales promelas (fathead minnow)
Method: Other guideline method.
Remarks: NOEC/NOEL > 0.1 - <=1.0 mg/l
- Toxicity to crustacean(Chronic toxicity) : NOEC: 3 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia (Water flea)
Method: Other guideline method.
Remarks: NOEC/NOEL > 1.0 - <= 10 mg/l

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12.2 Persistence and degradability

Components:

acetone :

Biodegradability : Biodegradation: 90,9 %
Exposure time: 28 d
Method: Test(s) equivalent or similar to OECD Guideline 301 B
Remarks: Readily biodegradable.

Benzene :

Biodegradability : Biodegradation: 96 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Readily biodegradable.
Not Persistent per IMO criteria.
International Oil Pollution Compensation (IOPC) Fund definition: "A non-persistent oil is oil, which, at the time of shipment, consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340°C (645°F) and (b) at least 95% of which, by volume, distills at a temperature of 370°C (700°F) when tested by the ASTM Method D-86/78 or any subsequent revision thereof."

12.3 Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water : log Pow: 0,2

Components:

acetone :

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Benzene :

Bioaccumulation : Species: Leuciscus idus (Golden orfe)
Exposure time: 3 d
Bioconcentration factor (BCF): < 10
Method: Test(s) equivalent or similar to OECD Test Guideline 305
Remarks: Does not bioaccumulate significantly.

12.4 Mobility in soil

Components:

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acetone :

Mobility

: Remarks: If product enters soil, it will be mobile and may contaminate groundwater., Dissolves in water.

Benzene :

Mobility

: Remarks: Floats on water.

12.5 Other adverse effects

Components:

acetone :

Results of PBT and vPvB assessment

: The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

Benzene :

Results of PBT and vPvB assessment

: The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues

: Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses.

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local regulations may be more stringent than regional or national requirements and must be complied with.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging

: Drain container thoroughly.

After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard.
Do not, puncture, cut, or weld uncleaned drums.

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Send to drum recoverer or metal reclaimer.

Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

14. Transport information

14.1 UN number or ID number

ADR : 1090

IMDG : 1090

IATA : 1090

14.2 UN proper shipping name

ADR : ACETONE

IMDG : ACETONE

IATA : ACETONE

14.3 Transport hazard class(es)

ADR : 3

IMDG : 3

IATA : 3

14.4 Packing group

ADR

Packing group : II

Classification Code : F1

Hazard Identification Number : 33

Labels : 3

IMDG

Packing group : II

Labels : 3

IATA

Packing group : II

Labels : 3

14.5 Environmental hazards

ADR

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or

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needs to comply with in connection with transport.

14.7 Maritime transport in bulk according to IMO instruments

Pollution category : Z
Ship type : 3
Product name : Acetone

Additional Information : This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry.

15. Regulatory information

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

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

DS 090 - 1996. Ministry of Economic Development and Reconstruction. DS 375 - 1985. Ministry of Economic Development and Reconstruction. DS 594 - 2000. Ministry of Health. DS 298 - 1995. Ministry of Transport and Telecommunications.

Other international regulations

The components of this product are reported in the following inventories:

AIIC : Listed
DSL : Listed
IECSC : Listed
ENCS : Listed
KECI : Listed
NZIoC : Listed
PICCS : Listed
TSCA : Listed
TCSI : Listed

16. Other information

Full text of H-Statements

H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

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H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic	Long-term (chronic) aquatic hazard
Asp. Tox.	Aspiration hazard
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
Muta.	Germ cell mutagenicity
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

Further information

Training advice : Provide adequate information, instruction and training for operators.

NFPA Rating (Health, Fire, Reactivity) 2, 3, 0

Other information : A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID data base, EC 1272 regulation, etc).

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.