

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

Material Name Uses Product Code	 Acetone Industrial Solvent.Restricted to professional users. S1212, U8903, S1260
Manufacturer/Supplier	 Shell Chemicals Europe B.V. PO Box 8610 3009 AP Rotterdam Netherlands
Telephone Fax	: +31 (0)10 231 7000 : +31 (0)10 231 7180
Emergency Telephone Number	: +31 (0)10 431 3233

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material Formal Name	: F	Propan-2-one
CAS No.	: 6	67-64-1
INDEX No.	: 6	606-001-00-8
EINECS No.	: 2	200-662-2

3. HAZARDS IDENTIFICATION

Health Hazards	:	Vapours may cause drowsiness and dizziness. Slightly irritating to respiratory system. Repeated exposure may cause skin dryness or cracking. Irritating to eyes. Harmful: may cause lung damage if swallowed.
Signs and Symptoms	:	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. Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance. Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Lung damage (scarring, bronchitis, emphysema) may be indicated by shortness of breath, especially on exertion, and may be accompanied by a chronic cough.
Aggravated Medical Condition	:	Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin. Respiratory system.
Safety Hazards	:	Highly flammable.



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4. FIRST AID MEASURES

Inhalation	Remove to fresh air. Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.
Skin Contact	Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
Eye Contact	Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.
Ingestion	DO NOT DELAY. Do not induce vomiting. If victim is alert, rinse mouth and drink 1/2 to 1 glass of water to help dilute the material. Do not give liquids to a drowsy, convulsing, or unconscious person. Transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Specific Hazards :	Containers exposed to intense heat from fires should be cooled with large quantities of water. The vapour is heavier than air, spreads along the ground and distant ignition is possible
Extinguishing Media :	Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Protective Equipment for : Firefighters	Wear full protective clothing and self-contained breathing apparatus. Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.
Additional Advice :	All storage areas should be provided with adequate fire fighting facilities. Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Protective measures	:	Handling equipment must be bonded and grounded (earthed) to prevent sparking. Extinguish any naked flames. Do Not smoke. Remove ignition sources. Avoid sparks. 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.
Clean Up Methods	:	Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. Remove with explosion-proof vacuum trucks or pump to storage/salvage vessels.



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Additional Advice Local authorities should be advised if significant spillages cannot be contained. Proper disposal should be evaluated based on regulatory status of this material (refer to Section 13), potential contamination from subsequent use and spillage, and regulations governing disposal in the local area. The vapour is heavier than air, spreads along the ground and distant ignition is possible. 7. HANDLING AND STORAGE Handling : Avoid breathing of or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For quidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge. Cleaning, inspection and maintenance of storage tanks is a Storage specialist operation which requires the implementation of strict procedures and precautions. Keep away from flammables, oxidizing agents, and corrosives. The vapour is heavier than air. Beware of accumulation in pits and confined spaces. **Product Transfer** : Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge. For containers, or container linings use mild steel, stainless **Recommended Materials** steel. For container paints, use epoxy paint, zinc silicate paint.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Material	Source	Туре	ppm	mg/m3	Notation
Acetone	ACGIH	TWA	500 ppm		
	ACGIH	STEL	750 ppm		

Material Acetone	Source ACGIH	Hazard Designation Not classifiable as a human carcinogen.
Exposure Controls	: The level of protection and typ depending upon potential exp based on a risk assessment o Appropriate measures include emergency use. Adequate exp airborne concentrations below Exhaust emission systems sho with local conditions; the air sh from the source of vapour gen at this point. Provide adequate	es of controls necessary will vary osure conditions. Select controls f local circumstances. : Eye washes and showers for olosion-proof ventilation to control the exposure guidelines/limits. ould be designed in accordance nould always be moved away eration and the person working a ventilation in storage areas.
Personal Protective	: Personal protective equipmen	t (PPE) should meet



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Equipment	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. Where air- filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours [boiling point <65°C (149°F)] meeting EN371. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
Hand Protection	: Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. 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: Nitrile rubber. PVC. Viton.
Eye Protection	: Wear safety glasses or full face shield if splashes are likely to occur.
Protective Clothing	 Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.
Environmental Exposure Controls	: 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: Eye washes and showers for emergency use. Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Exhaust emission systems should be designed in accordance with local conditions; the air should always be moved away from the source of vapour generation and the person working at this point. Firewater monitors and deluge systems are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Odour pH Boiling point Flash point Explosion / Flammability limits in air	: : : : : : : : : : : : : : : : : : : :	Clear Liquid Characteristic Not applicable. -95 °C / -139 °F -18 °C / 0 °F (IP 170) ca. 2.1 - 13 %(V)
Auto-ignition temperature Vapour pressure Density Water solubility n-octanol/water partition coefficient (log Pow)	: : : : : : : : : : : : : : : : : : : :	540 °C / 1,004 °F (ASTM D-2155) 24.7 kPa at 20 °C / 68 °F 790 - 792 kg/m3 at 20 °C / 68 °F (ASTM D-4052) at 20 °C / 68 °F Completely miscible. 0.2
Dynamic viscosity Vapour density (air=1)	:	0.33 mPa.s at 20 °C / 68 °F 2 at 20 °C / 68 °F



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Electrical conductivity Coefficient of expansion Dielectric constant Heat of vapourisation Refractive index Specific heat Saturated Vapour	 20 μS/m at 20 °C / 68 °F (ASTM D-4308) 0.0014 / °C 21.4 at 20 °C / 68 °F 525 kJ/kg °C 1.359 at 20 °C / 68 °F (ASTM D-1218) 2.14 kJ/kg °C at 20 °C / 68 °F 590 g/m3 at 20 °C / 68 °F (estimated value(s))
concentration (in air) Thermal conductivity Volatile organic carbon	0.16 W/m °C at 20 °C / 68 °F 62 % (EC/1999/13)
Evaporation rate (nBuAc=1)	: 5.6 (ASTM D 3539, nBuAc=1) 2 (DIN 53170, di-ethyl ether=1)
Surface tension Molecular weight	: 22.8 mN/m at 20 °C / 68 °F : 58.08 g/mol

10. STABILITY AND REACTIVITY

Stability	: Stable under normal conditions of use.
Conditions to Avoid	: Avoid heat, sparks, open flames and other ignition sources.
Materials to Avoid	: Strong oxidising agents.
Hazardous	: None expected under normal use conditions.
Decomposition Products	

11. TOXICOLOGICAL INFORMATION

Basis for Assessment : Acute Oral Toxicity :	Information given is based on product testing. Low toxicity: LD50 >2000 mg/kg , Rat Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.
Acute Dermal Toxicity	Low toxicity: LD50 >2000 mg/kg , Rabbit
Acute Inhalation Toxicity	Low toxicity: LC50 >20 mg/l Rat
Skin Irritation :	Not irritating to skin.
	Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
Eye Irritation :	Irritating to eyes.
Sensitisation :	Not expected to be a skin sensitiser.
Repeated Dose Toxicity :	Low systemic toxicity on repeated exposure.
Mutagenicity :	Not mutagenic.
Carcinogenicity :	Not expected to be carcinogenic.
Reproductive and :	Not expected to impair fertility.
Developmental Toxicity	
Additional Information :	Exposure may enhance the toxicity of other materials

12. ECOLOGICAL INFORMATION

Acute Toxicity		
Fish	:	Low toxicity: LC/EC/IC50 > 1000 mg/l
Aquatic Invertebrates	:	Low toxicity: LC/EC/IC50 > 1000 mg/l
Algae	:	Low toxicity: LC/EC/IC50 > 1000 mg/l
Microorganisms	:	Low toxicity: LC/EC/IC50 > 1000 mg/l
Mobility	:	If product enters soil, it will be mobile and may contaminate groundwater.



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Persistence/degradability Bioaccumulation	:	Dissolves in water. Readily biodegradable. Not expected to bioaccumulate significantly.
13. DISPOSAL CONSIDERATION	١S	
Material Disposal	:	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.
Container Disposal	:	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. Send to drum recoverer or metal reclaimer.

14. TRANSPORT INFORMATION

ADR		
Class	:	3
Packing group	:	II
Classification code	:	F1
Hazard indentification no.	:	33
UN No.	:	1090
Danger label (primary risk)	:	3
Proper shipping name	:	ACETONE
RID		
Class	:	3
Packing group	:	11
Classification code	:	F1
Hazard indentification no.	:	33
UN No.	:	1090
Danger label (primary risk)	:	3
Proper shipping name	:	ACETONE
IMDG		
Identification number		UN 1090
Proper shipping name		ACETONE
Class / Division		3

IATA (Country variations may apply)

Packing group Marine pollutant:

UN No.	:	1090
Proper shipping name	:	Acetone
Class / Division	:	3
Packing group	:	II

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15. REGULATORY INFORMATION

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

EC Label Name	:	ACETONE	
EC label/EC Number	:	200-662-2	
EC Classification	:	Highly flammable.	Irritant.
EC Annex I Number	:	606-001-00-8	
EC Symbols	:	F Highly flammabl	e.
		Xi Irritant.	
EC Risk Phrases	:	R11 Highly flamma	able.
		R36 Irritating to ey	/es.
		R66 Repeated exp	posure may cause skin dryness or cracking.
		R67 Vapours may	cause drowsiness and dizziness.
EC Safety Phrases	:	S9 Keep container	r in a well-ventilated place.
		S16 Keep away from	om sources of ignition - No smoking.
		S26 In case of cor	ntact with eyes, rinse immediately with plenty
		of water and seek	medical advice.
AICS	:	Listed.	
DSL	:	Listed.	
INV (CN)	:	Listed.	
ENCS (JP)	:	Listed.	(2)-542
TSCA	:	Listed.	
EINECS	:	Listed.	200-662-2
KECI (KR)	:	Listed.	KE-29367
PICCS (PH)	:	Listed.	
National Legislation			
OE_HPV	:	Listed.	

16. OTHER INFORMATION

R-phrase(s)

R11 R36 R66 R67	Highly flamma Irritating to ey Repeated exp Vapours may	able /es. bos ca	e. ure may cause skin dryness or cracking. use drowsiness and dizziness.
MSDS Version	Number	:	1
MSDS Effective	Date	:	23.07.2003
MSDS Revision	S	:	A vertical bar () in the left margin indicates an amendment from the previous version
MSDS Regulation	on	:	The content and format of this safety data sheet is in accordance with Commission Directive 2001/58/EC of 27 July 2001, amending for the second time Commission Directive 91/155/EEC.
MSDS Distribut	ion	:	The information in this document should be made available to



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Disclaimer

all who may handle the product

: 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.