

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Acetyl acetone



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

1.1 Product identifier

Trade name Acetyl acetone
Chemical Name Pentane 2,4-dione

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

Relevant identified uses For the synthesis of anti-corrosion preparations
For synthesis of vitamin B6, vitamin K, pharmaceuticals and pesticides
As a radical initiator for polymerizations
As a building block for heterocycles
For the synthesis of metal acetylacetonates used as catalysts
Uses identified against Not for use other than those specified

1.3 Details of the supplier of the safety data sheet:

Manufacturer Prasol Chemicals Limited,
Prasol House, Plot No.A-17/2/3,
T.T.C. Industrial Area, Khairne M.I.D.C.,
Navi Mumbai - 400 710.
Maharashtra, India.
Telephone +91-22-69450600/ 61952500
Telefax +91-22-61952577
e-mail address sales@prasolchem.com; inquiry@prasolchem.com

1.4 Emergency telephone number

Telephone +91-22- 7045783555/ 7045790555
Language English

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Flammable Liquid	Category 3	H226	Flammable liquid and vapor
Acute Toxicity	Category 3	H301	Toxic if swallowed

Information concerning particular hazards for human and environment: No further information

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008 (CLP)

Hazard
pictograms



GHS02



GHS06

Signal word

Danger

Hazard statements

H226

Flammable liquid and vapor

H301

Harmful if swallowed

Precautionary statements

General

P103

Read label before use.

Prevention

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.

P243

Take action to prevent static discharge.

P264

Wash hands thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P280

Use protective gloves and eye protection.

Response

P301+P316

IF SWALLOWED: Get emergency medical help immediately.

P303+P361+P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P321

Specific treatment: wash with plenty of water and mild soap.

P330

Rinse mouth.

P370+P378

In case of fire: Use CO₂, dry powder, foam or water spray to extinguish.

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Storage P403+P235 Store in a well-ventilated place. Keep cool.
Disposal P501 Dispose of contents and container in accordance with national regulations.

2.3 Other hazards

Not a PBT, vPVB substance according to the criteria of REACH regulation

SECTION 3: Composition/information on ingredients

3.1 Substances

Name Acetyl acetone
CAS Number 123-54-6
EC Number 204-634-0
Molecular Formula $C_5H_8O_2$
Molecular Weight 100.13

Ingredient	Classification	Concentration (%)
Acetyl acetone	Flam. Liq. 3, Ac. Tox. Oral 4 H226, H302	99.5 - 100

There are no other ingredients present, which are classified as hazardous and hence require reporting in this section.

3.2 Mixtures not applicable

None of the ingredients present are classified as skin sensitisers 1A, respiratory sensitisers 1A, aspiration hazards and endocrine disruptors.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off all contaminated clothing immediately.
After inhalation If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.
After skin contact Wash off with plenty of water immediately, seek medical advice if necessary.
After eye contact Rinse with plenty of water immediately and seek medical advice.
After swallowing Do not induce vomiting and seek medical advice immediately.
4.2 Most important symptoms and effects, both acute and delayed General: Burning eyes and skin, fatigue, nausea, unconsciousness.
After inhalation: Dizziness, Suffocation.
Systemic effects: Dizziness, Headache, Shortness of breath, respiratory arrest, Unconsciousness; Damage to: Liver, Kidney.
4.3 Indication of any immediate medical attention and special treatment needed Persons with pre-existing skin, respiratory, and/or central nervous system disease may be at increased risk if exposed to this material.
Attention: Symptoms of poisoning may not become apparent until after many hours - medical monitoring is therefore required for at least 48 hours after any accident.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media CO_2 , dry powder, foam or water spray
Unsuitable extinguishing media water jet

5.2 Special hazards arising from the substance or mixture

Highly flammable. Explosive mixtures with air may even form at room temperature. Beware of re-ignition
Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back-flash over great distances when ignited. Ignition by hot surfaces, sparks and open flames.

May form toxic carbon oxides if case of fire.

5.3 Advice for firefighters

Do not expose to high temperature. Danger of bursting and explosion.
Use fine water spray to cool endangered containers. Move undamaged containers from immediate hazard area. Do not allow fire water to penetrate into surface or ground water. Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities. Mixtures with 4% acetone and 96% water still have a flash point of 54°C.

SECTION 6: Accidental release measures

6.1 Personal precautions, Remove persons not involved upwind.

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protective equipment and emergency procedures	Wear a self-contained breathing apparatus and chemical protective clothing. Solvent-resistant protective clothing recommended.
6.2 Environmental precautions	Plug leak if safely possible. Do not allow to enter drains, surface waters, basements or pits. When released into the environment, alert police and fire brigade. Seal all low level rooms. Danger of explosion!
6.3 Methods and material for containment and cleaning up	In case of spills of large quantities: Dam spills and pump to remove. Explosion protection required. Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal. Flowing water: Dilution occurs quickly. In case of large spills/leaks inform appropriate local, state, and federal spill reporting authorities. Standing water: Seal off. Remove all sources of ignition.
6.4 Reference to other sections	Section 8 for information on personal protection equipment. Section 13 for disposal information

SECTION 7: Handling and storage

7.1 Precautions for safe handling	Provide adequate ventilation, and local exhaust as needed. Provide room air exhaust at ground level. Concentrated vapours are heavier than air. Avoid the formation of aerosol. Do not breathe vapours. Use only explosion-protected equipment/instruments. Do not use air pressure..
7.2 Conditions for safe storage, including any incompatibilities	
Advice on protection against fire and explosion	Exposure to temperatures exceeding 50 °C will increase pressure: resulting in danger of bursting or explosion. Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharge. Beware of re-ignition. Potentially explosive mixture may form within partially empty containers. Emergency cooling must be provided for in case of a fire in the vicinity. Do not weld.
Storage	Keep container dry and tightly closed at ambient temperatures (-40°C to +40°C) in a well-ventilated place. Protect from direct sunlight.
Packaging material	Steel, stainless steel, and aluminium.
Incompatibility	Copper may be attacked. May attack plastics.
Advice on common storage	Observe prohibition against storing together!
Storage class	3 Flammable liquids
Storage stability	Stable under recommended storage conditions
7.3 Specific end use(s)	Solvent

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	Occupational Exposure Limit not established
8.2 Exposure controls	
Appropriate engineering controls	Explosion protection required. Provide good ventilation and/or an exhaust system in the work area.
Personal protective equipment	
Eye/ face protection	closed goggles, face shield
Skin protection	
Hand protection	Butyl-rubber 0.5 mm > 480 min
Body protection	Use solvent-resistant protective clothing. Flame-retardant antistatic protective clothing; safety shoes
Respiratory protection	Respiratory equipment with suitable filter or a self-contained respiratory apparatus.
Thermal hazards	Flammable liquid; do not expose to heat
Industrial hygiene	Do not inhale vapours / aerosols. Avoid contact with skin and eyes. Remove immediately all contaminated clothing. Use disposable clothing if appropriate. Smoking, eating and drinking should be prohibited in the application area.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties	
Appearance	Colourless liquid
Odour	Unpleasant

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Odour threshold	0.01ppm
pH	Not applicable (does not release H ⁺ ions); pKa 8.99 at 20°C
Melting point	-23°C
Boiling point	140°C
Flash point	35°C (Closed cup) (Flammable liquid Category 3)
Evaporation rate	0.75 (nBuAc=1)
Flammability (solid, gas)	highly flammable
Flammability limits	Lower 2.4 Vol % Upper 11.6 Vol %
Vapour pressure	7.9 hPa at 20°C
Vapour density	3.5 (air =1)
Relative density	0.975 at 20°C
Solubility in water	16g/100ml at 20°C
Partition coefficient	0.68 log Kow (n-octanol/water) at 20°C
Ignition temperature	340°C
Decomposition temperature	no data available
Viscosity at 20°C	0.762mPa.s
Particle characteristics	Not applicable (substance is a liquid)
9.2 Other information	
Explosive properties	No explosive properties. Formation of explosive air/ vapour mixtures is possible.
Oxidizing properties	no oxidizing properties
Surface tension	72 mN/m at 20°C
Heat of combustion	-2685kJ/mol
Heat of vaporization	39.4 kJ/mol

SECTION 10: Stability and reactivity

10.1 Reactivity	Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back-flash over great distances when ignited. May become electrostatically charged.
10.2 Chemical stability	Under storage at normal ambient temperatures (-40°C to +40°C), the product is stable. Unstable in the presence of incompatible materials. Hazardous polymerisation will not occur.
10.3 Possibility of hazardous reactions	No known hazardous reactions if used as directed. See Section 7 for further information
10.4 Conditions to avoid	Flammable. Concentrated vapours are heavier than air. Forms explosive mixtures with air, also in empty, uncleaned containers.
10.5 Incompatible materials	Avoid contact with strong oxidizing agents, alkalis and amines. See section 7.
10.6 Hazardous decomposition products	Thermal decomposition products- carbon monoxide, carbon dioxide and other pyrolysis products typical of burning organic material

SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute toxicity	
LD50 oral rat	570 mg/kg bw Cat 3, H301
LC50 inhalation 4h, rat	5.1 mg/l Harmful
LD50 Dermal rabbit	790 ml/kg bw Harmful
Skin irritation	Not irritating
Serious eye irritation	slightly irritating
Respiratory or skin sensitization	No sensitizing effects known
Germ cell mutagenicity	non mutagenic (Ames test)
Carcinogenicity	no indications for a carcinogenic potential
Reproductive toxicity	no adverse effect on reproduction (rat)
STOT-single exposure	sluggishness, tremors, kyphosis, lacrimation, unsteady gait, comatose appearance and prostration
STOT-repeated exposure	Inhalation: systemic effects (target organ) neurologic: brain Dermal: systemic effects (target organ) cardiovascular / hematological: thymus
Aspiration hazard	no data available

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11.2 Information on other hazards

Endocrine disrupting properties

No endocrine disrupting properties

Other information

No further information

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Toxicity to fish	LC50	96h	104mg/L	<i>Pimephales promelas</i>
Toxicity to aquatic invertebrates	EC50	48h	25.9 mg/L	<i>Daphnia magna</i>
Toxicity to aquatic algae and cyanobacteria	EC50	72h	8.36 mg/L	<i>Pseudokirchneriella subcapitata</i>
Toxicity to microorganisms	EC50	3h	107.6mg	sewage, domestic

12.2 Persistence and degradability

Biodegradation

readily biodegradable (>80% in 28days)

12.3 Bioaccumulative potential

No potential for bioaccumulation due to low Kow; estimated BCF of 3.2

12.4 Mobility in soil

Percent distribution in media:

Air (%): 10.05; Water (%): 89.77; Soil (%): 0.17

12.5 Results of PBT and vPvB assessment

Not a PBT, vPvB substance according to the REACH regulation

12.6 Endocrine disrupting properties

No endocrine disrupting properties

12.7 Other adverse effects

No further information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Observe all federal, state, and local environmental regulations.
Contact a licensed professional waste disposal service to dispose of this material.
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Do not dispose in sewage.

SECTION 14: Transport information

	ADR/RID	IMDG	ICAO/IATA
14.1 UN Number	2310	2310	2310
14.2 UN proper shipping name		Pentane-2,4-dione	
Chemical name		Acetyl acetone	
14.3 Transport hazard class	3, 6.1	3, 6.1	3, 6.1
14.4 Packaging group	III	III	III
14.5 Environmental hazards	not environmentally hazardous, not a marine pollutant		
14.6 Special precautions for the user	Flammable liquid; Flash point 35°C (closed cup)		
Danger group (Kemmler)	36		
EmS Number	F-E, S-D		
Tunnel restriction code	D/E		
14.7 Transport in bulk according to Annex II of MARPOL/73/78 and the IBC Code	See regulatory information for transport approval		

SECTION 15: Regulatory information

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

Major accident hazard Seveso III P5a, P5b, P5c (Flammable liquids)

International Chemical Inventory Status

USA (TSCA) Listed (Tracking No. 33035)

Canada (DSL) listed

Australia (AICS) listed

Japan (MITI) Listed (MITI No. 2-562)

Korea (KECL) Listed (KE-27993)

Philippines (PICCS) listed

China listed

New Zealand listed

Taiwan listed

15.2 Chemical safety assessment

A Chemical Safety Assessment will be carried out at the time of REACH registration



SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Further information:

Sections in which changes have been made since the last version are marked with a diamond ♦ in the left hand margin.

Abbreviations and acronyms in English language:

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CLP	Classification for Labeling and Packaging
DSL	Domestic Substances List
EC	European Commission
EC50	Half maximal effective concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
IATA	International Air Transport Association
IBC	International Bulk Chemical
ICAO	International Civil Aviation Organization
IMDG	International Maritime Code for Dangerous Goods
KECL	Korea Existing Chemicals List
KOW	Partition Coefficient octanol-water
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
MARPOL	International Convention for the Prevention of Pollution from Ships
MITI	Ministry of International Trade and Industry
PBT	Persistent, bioaccumulative and toxic substances
PICCS	Philippine Inventory of Chemicals and Chemical Substances
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
STOT	Specific target organ toxicity
TSCA	Toxic Substances Control Act
UN	United Nations
vPVB	(very) Persistent, (very) Bioaccumulative

Sources

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

ECHA <https://echa.europa.eu/registration-dossier/-/registered-dossier/14713>

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