

Safety Data Sheet

16 Mix aldehydes and ketones-DNPH in acetonitrile

Version : V2.0.0.1

Report No. : BWQ9128-2016-MSDS-US

Creation Date : 2025/11/19

Revision Date : -



*Prepared according to American OSHA HCS-2024 (29 CFR 1910.1200)

1 Identification

Product identifier

Product Name	16 Mix aldehydes and ketones-DNPH in acetonitrile
Cat No.	BWQ9128-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable

Recommended use of the product and restrictions on use

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

Details of the supplier of the Safety Data Sheet

Name of the company	Weiyel Inc
Address of the company	Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China
Post code	465350
Telephone number	010-58103678
Fax number	010-84840368
E-mail address	info@weiyel.com

Emergency phone number

Emergency phone number	010-58103678
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2 Hazard(s) identification

Hazard classification according to 29 CFR 1910.1200

Flammable liquids	Category 2
Acute Toxicity - Oral	Category 4
Acute Toxicity - Dermal	Category 4
Serious eye damage/irritation	Category 2
Acute Toxicity - Inhalation	Category 3

Label elements

Hazard pictograms	  
Signal word	Danger

Hazard statements

H225	Highly flammable liquid and vapour
H302	Harmful if swallowed
H312	Harmful in contact with skin
H319	Causes serious eye irritation
H331	Toxic if inhaled

Precautionary statements

◆ 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 discharges.
P261	Avoid breathing gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or with adequate ventilation.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

◆ Response

P321	Specific treatment (see information on this label and safety data sheet).
P330	Rinse mouth.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	Small fire: dry chemical, CO ₂ or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.

◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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| Other hazards

	Not applicable.
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| Hazard description

◆ Physical and chemical hazards

	Highly flammable liquids, its vapor and air mixture can form explosive mixture.
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◆ Health hazards

Inhaled	Sore throat. Weakness. Abdominal pain. Laboured breathing. Convulsions. Unconsciousness. Vomiting. Symptoms may be delayed.
Ingestion	(Further see Inhalation).
Skin Contact	Redness.
Eye	Redness. Pain.

◆ Environmental hazards

	Please refer to 12th chapter of SDS.
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3 Composition/information on ingredients

| Substance/mixture

	Mixture
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Component	CAS No.	EC No.	Concentration (wt, %)
Acetonitrile	75-05-8	200-835-2	99.9696
Formaldehyde	50-00-0	200-001-8	0.0019
Acetaldehyde	75-07-0	200-836-8	0.0019
Acrylaldehyde	107-02-8	203-453-4	0.0019
Acetone	67-64-1	200-662-2	0.0019
Propionaldehyde	123-38-6	204-623-0	0.0019
(E)-crotonaldehyde	123-73-9	204-647-1	0.0019
Butyraldehyde	123-72-8	204-646-6	0.0019
Butanone	78-93-3	201-159-0	0.0019
Benzaldehyde	100-52-7	202-860-4	0.0019
Valeraldehyde	110-62-3	203-784-4	0.0019
2-tolualdehyde	529-20-4	208-452-2	0.0019
m-tolualdehyde	620-23-5	210-632-0	0.0019
p-tolualdehyde	104-87-0	203-246-9	0.0019
Hexanal	66-25-1	200-624-5	0.0019
Cyclohexanone	108-94-1	203-631-1	0.0019
Methacrylaldehyde	78-85-3	201-150-1	0.0019

4 First-aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Ingestion	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give plenty of water to drink. Refer for medical attention.
Inhalation	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Small fire: dry chemical, CO ₂ or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out.
Unsuitable extinguishing media	Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the substance or mixture

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	May emit poisonous fumes on fire.
6	Development of hazardous combustion gases or vapor possible in the event of fire.
7	May expand or decompose explosively when heated or involved in fire.

Special protective equipment and precautions for fire-fighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
6	Do not touch or walk through spilled material.
7	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
8	Use personal protective equipment, do not breathe gas/mist/vapour/spray.
9	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
10	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

1	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-static clothing.
2	In case of small amount of spillage, use clean non sparking tools to collect absorption materials.
3	In case of large amount of spillage, construct cofferdam or dig a hole to collect the spillage. Use foam cover to reduce evaporation. Water spray mist can reduce evaporation, but can not reduce the flammability of the leakage in the restricted space.
4	Collect absorbent material using a clean, non-sparking tool.
5	Cover with anti-solvent foam to reduce evaporation.
6	Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
7	Water spray reduces evaporation but does not reduce the flammability of spills in confined spaces.
8	Do not touch or cross spills.
9	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-virus suits.
10	Spray water disperses the vapor and dilutes the liquid spill.
11	Do not touch broken containers and spills before putting on appropriate protective clothing.
12	Cut off the source of the leak as much as possible.
13	Keep leaks in a ventilated place.
14	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
15	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
16	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.
17	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7 Handling and storage**Precautions for safe handling**

1	Avoid inhalation of vapors.
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2	Use only non-sparking tools.
3	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
4	Use explosion proof equipment.
5	Handling is performed in a well ventilated place.
6	Wear suitable protective equipment.
7	Avoid contact with skin and eyes.
8	Keep away from heat/sparks/open flames/ hot surfaces.

Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.

8 Exposure controls/personal protection

Control parameters

◆ Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m ³	ppm	mg/m ³
Acetonitrile	Permissible exposure standards for workers in the workplace	40	67	60	100.5
	Australia	40	67	60	101
	Canada - Ontario	20	-	-	-
	European Union	40	70	-	-
	New Zealand	40	67	60	101
	USA - ACGIH	20	-	-	-
Formaldehyde	Japan - JSOH(2024-2025)	0.1	0.12	-	-
	Permissible exposure standards for workers in the workplace	0.75	0.9	2.25	2.7
	Australia	1	1.2	2	2.5
	Canada - Ontario	-	-	1	-
	European Union	0.3	0.37	0.6	0.74
	New Zealand	0.3	-	0.6	-
Acetaldehyde	Japan - JSOH(2024-2025)	-	-	-	-
	Permissible exposure standards for workers in the workplace	100	180	125	225

	Australia	20	36	50	91
	Canada - Ontario	-	-	25	-
	USA - OSHA	200	360	-	-
	Austria	50	90	50	90
Acrylaldehyde	Japan - JSOH(2024–2025)	0.1	0.23	-	-
	Permissible exposure standards for workers in the workplace	0.1	0.23	0.3	0.69
	Australia	0.1	0.23	0.3	0.69
	Canada - Ontario	-	-	0.1	-
	European Union	0.02	0.05	0.05	0.12
	New Zealand	0.1	0.23	-	-
Acetone	Japan - JSOH(2024–2025)	200	475	-	-
	Permissible exposure standards for workers in the workplace	200	475	250	593.75
	Australia	500	1185	1000	2375
	Canada - Ontario	250	-	500	-
	European Union	500	1210	-	-
	New Zealand	500	1185	1000	2375
Propionaldehyde	Canada - Ontario	20	-	-	-
	USA - ACGIH	20	-	-	-
	Belgium	20	48	-	-
	Canada - Québec	20	-	-	-
	Finland	20	48	-	-
	Ireland	20	-	-	-
(E)-crotonaldehyde	USA - NIOSH	2	6	-	-
	USA - OSHA	2	6	-	-
	Austria	0.34	1	1.36	4
	Denmark	2	6	4	12
	Finland	0.1	0.29	0.3	0.87
	France	2	6	-	-
Butyraldehyde	Austria	20	64	20	64
	Finland	25	74	-	-
	Germany (AGS)	20	64	20	64
	Latvia	-	5	-	-

	Romania	-	-	9	25
Butanone	Japan - JSOH(2024–2025)	75	221	-	-
	Permissible exposure standards for workers in the workplace	200	590	250	737.5
	Australia	150	445	300	890
	Canada - Ontario	200	-	300	-
	European Union	200	600	300	900
	New Zealand	150	445	300	890
Benzaldehyde	Canada - Ontario	-	-	4	17
	Finland	1	4.4	4	17.4
	Hungary	-	3.25	-	-
	Latvia	-	5	-	-
	Poland	-	10	-	40
Valeraldehyde	Permissible exposure standards for workers in the workplace	50	176	75	220
	Australia	50	176	-	-
	Canada - Ontario	50	-	-	-
	New Zealand	50	176	-	-
	USA - ACGIH	50	-	-	-
	USA - NIOSH	50	175	-	-
Hexanal	Finland	-	-	10	42
	Poland	-	40	-	80
Cyclohexanone	Japan - JSOH(2024–2025)	25	100	-	-
	Permissible exposure standards for workers in the workplace	25	100	37.5	125
	Australia	25	100	-	-
	Canada - Ontario	20	-	50	-
	European Union	10	40.8	20	81.6
	New Zealand	25	100	-	-

Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.

4 Set up emergency exit and necessary risk-elimination area.

Personal protection equipment

General requirement	    
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Must wear appropriate personal dust proof gas mask.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

9 Physical and chemical properties and safety characteristics

Physical and chemical properties

Appearance (physical state, color, etc.)	colorless liquid
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	-46 (Acetonitrile)
Initial boiling point and boiling range(°C)	82 (Acetonitrile)
Flash point(Closed cup, °C)	2 (Acetonitrile)
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[% (v/v)]	Upper limit : 17 (Acetonitrile); Lower limit : 3 (Acetonitrile)
Vapor pressure	9.9kPa (25°C, Acetonitrile)
Vapor density(Air = 1)	1.4 (Acetonitrile)
Relative density(Water=1)	0.8 (Acetonitrile)
Solubility	1000000mg/L (25 °C, Acetonitrile)
n-octanol/water partition coefficient	-0.3 (Acetonitrile)
Auto-ignition temperature(°C)	524 (Acetonitrile)
Decomposition temperature(°C)	No information available
Kinematic viscosity	No information available

10 Stability and reactivity

Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	In contact with N-halogen compounds may cause a potensive explosive hazardous. In contact with oxidants may cause a fire. In contact with oxidants may cause a fire or an explosion.
Conditions to avoid	Incompatible materials, heat, flame and spark.

Incompatible materials	N - halogenated compounds, sulfuric acid and strong oxidants. Oxidants, acids and alkalis. Oxidants, chloroform and bromoform
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
Valeraldehyde	4580mg/kg(Rat)	4050mg/kg(Rabbit)	No information available
Propionaldehyde	1410mg/kg(Rat)	2460mg/kg(Rabbit)	> 4.6mg/L(Rat)
(E)-crotonaldehyde	240mg/kg(Mouse)	380mg/kg(Rabbit)	No information available
Butyraldehyde	2490mg/kg(Rat)	2910mg/kg(Rabbit)	No information available
Butanone	2737mg/kg(Rat)	6480mg/kg(Rabbit)	32mg/L(Mouse)
Acetone	5800mg/kg(Rat)	> 15800mg/kg(Rabbit)	76mg/L(Rat)
Benzaldehyde	1300mg/kg(Rat)	No information available	No information available
Acetonitrile	2460mg/kg(Rat)	> 2000mg/kg(Rabbit)	4.748mg/L(Rabbit)
p-tolualdehyde	1600mg/kg(Rat)	2500mg/kg(Rat)	No information available
Acrylaldehyde	29mg/kg(Rat)	200mg/kg(Rabbit)	0.018mg/L(Rat)
Methacrylaldehyde	140mg/kg(Rat)	364mg/kg(Rabbit)	No information available
Acetaldehyde	661mg/kg(Rat)	3540mg/kg(Rabbit)	23.962mg/L(Rat)
Hexanal	4890mg/kg(Rat)	No information available	No information available
Formaldehyde	100mg/kg(Rat)	292mg/kg(Rabbit)	0.454mg/L(Mouse)
Cyclohexanone	1530mg/kg(Rat)	947mg/kg(Rabbit)	32.111mg/L(Rat)

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP	OSHA Carcinogen List
Acetonitrile	Not Listed	Not Listed	Not Listed
Formaldehyde	Category 1	Category K	Listed
Acetaldehyde	Category 2B; Category 1(Remark 1)	Category R	Not Listed
Acrylaldehyde	Category 2A	Not Listed	Not Listed
Acetone	Not Listed	Not Listed	Not Listed
Propionaldehyde	Not Listed	Not Listed	Not Listed
(E)-crotonaldehyde	Not Listed	Not Listed	Not Listed
Butyraldehyde	Not Listed	Not Listed	Not Listed
Butanone	Not Listed	Not Listed	Not Listed
Benzaldehyde	Not Listed	Not Listed	Not Listed
Valeraldehyde	Not Listed	Not Listed	Not Listed
2-tolualdehyde	Not Listed	Not Listed	Not Listed

m-tolualdehyde	Not Listed	Not Listed	Not Listed
p-tolualdehyde	Not Listed	Not Listed	Not Listed
Hexanal	Not Listed	Not Listed	Not Listed
Cyclohexanone	Category 3	Not Listed	Not Listed
Methacrylaldehyde	Not Listed	Not Listed	Not Listed

Remark 1: associated with consumption of alcoholic beverages

Others

16 Mix aldehydes and ketones-DNPH in acetonitrile	
Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Causes serious eye irritation(Category 2)
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

12 Ecological information

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
Valeraldehyde	LC ₅₀ : 12.9mg/L (96h)(Fish)	EC ₅₀ : 32mg/L (48h)(Crustaceans)	ErC ₅₀ : >9.3mg/L (72h)(Algae)
Acetonitrile	LC ₅₀ : > 100mg/L (96h)(Fish)	EC ₅₀ : > 1000mg/L (48h)(Crustaceans)	ErC ₅₀ : >700mg/L (72h)(Algae)
Propionaldehyde	LC ₅₀ : 115mg/L (96h)(Fish)	EC ₅₀ : 88.7mg/L (48h)(Crustaceans)	ErC ₅₀ : 260mg/L (72h)(Algae)
Acrylaldehyde	LC ₅₀ : 0.019mg/L (96h)(Fish)	EC ₅₀ : 0.09mg/L (48h)(Crustaceans)	No information available
Acetaldehyde	LC ₅₀ : 30.8mg/L (96h)(Fish)	EC ₅₀ : 30mg/L (48h)(Crustaceans)	ErC ₅₀ : 26mg/L (72h)(Algae)
Hexanal	LC ₅₀ : 14mg/L (96h)(Fish)	EC ₅₀ : 7.16mg/L (48h)(Crustaceans)	ErC ₅₀ : 22.6mg/L (72h)(Algae)
Butyraldehyde	LC ₅₀ : 16mg/L (96h)(Fish)	No information available	No information available
Butanone	LC ₅₀ : 3220mg/L (96h)(Fish)	EC ₅₀ : 5090mg/L (48h)(Crustaceans)	ErC ₅₀ : >1200mg/L (72h)(Algae)
Formaldehyde	LC ₅₀ : 52.5mg/L (96h)(Fish)	EC ₅₀ : 14mg/L (48h)(Crustaceans)	No information available
Benzaldehyde	LC ₅₀ : 1.07mg/L (96h)(Fish)	No information available	ErC ₅₀ : 32mg/L (72h)(Algae)
Acetone	LC ₅₀ : 5540mg/L (96h)(Fish)	EC ₅₀ : 18500mg/L (48h)(Crustaceans)	ErC ₅₀ : 7200mg/L (96h)(Algae)
Cyclohexanone	LC ₅₀ : 630mg/L (96h)(Fish)	No information available	No information available

Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
Valeraldehyde	No information available	NOEC : 2.5mg/L(Crustaceans)	NOEC : 4.1mg/L(Algae)
Acetonitrile	NOEC : 102mg/L(Fish)	NOEC : >960mg/L(Crustaceans)	NOEC : 700mg/L(Algae)
Acetaldehyde	No information available	No information available	NOEC : 1.9mg/L(Algae)
Butanone	No information available	NOEC : 100mg/L(Crustaceans)	NOEC : 93mg/L(Algae)
Benzaldehyde	NOEC : 0.12mg/L(Fish)	No information available	NOEC : 2mg/L(Algae)

Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Formaldehyde	Low(Half-life = 14 days)	Low(Half-life = 2.97 days)
Butanone	Low(Half-life = 14 days)	Low(Half-life = 26.75 days)
Benzaldehyde	Low	Low
2-tolualdehyde	Low	Low
m-tolualdehyde	Low	Low
p-tolualdehyde	Low	Low
Cyclohexanone	Low	Low
Methacrylaldehyde	Low	Low

Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Formaldehyde	Low	Log Kow=0.35
Butanone	Low	Log Kow=0.29
Benzaldehyde	Low	Log Kow=1.48
2-tolualdehyde	Low	Log Kow=2.26
m-tolualdehyde	Low	Log Kow=2.2575
p-tolualdehyde	Low	Log Kow=2.2575
Cyclohexanone	Low	BCF=2.45
Methacrylaldehyde	Low	Log Kow=0.7361

Mobility in soil

Component	log Koc	Remark
Acetonitrile	0.653	
Formaldehyde	1.202	
Propionaldehyde	-0.007	25 °C , MCI method
Butyraldehyde	0.708	

Butanone	0.654	25 °C
Benzaldehyde	1.05	25 °C
2-tolualdehyde	1.733	
m-tolualdehyde	1.724	
p-tolualdehyde	1.724	
Hexanal	1.51	25 °C , pH=5.5
Cyclohexanone	1.60	20 °C
Methacrylaldehyde	0.631	

13 Disposal considerations

Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	 
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IMDG-CODE

UN number	1992
UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	6.1
Packing group	II
Marine pollutant (Yes or no)	No

IATA-DGR

UN number	1992
UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	6.1
Packing group	II

UN-ADR

UN number	1992
UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S.

Transport hazard class	3
Transport subsidiary hazard class	6.1
Packing group	II

Transport in bulk according to IMO instruments

- ◆ Transport in bulk according to Annex II of MARPOL and the IBC code

	Not Available
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- ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

	Not Available
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- ◆ Transport in bulk in accordance with the IGC Code

	Not Available
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Others

Precautions for transport	Transit should be anti-exposure, rain, high temperature. Strictly prohibited shipping or transportation with acids, alkalis, oxidants, food and food additives etc. Shipment of the goods vehicle exhaust pipe must be equipped with fire retardant devices, prohibit using mechanical equipment and tools of which easy to produce sparks. Transit should be anti-exposure, anti-rain, anti-high temperature. Transportation used tank (tank) cars should be grounded chain, tank can be installed to reduce the partition hole static electricity shocks. Strictly prohibited shipping or transportation with oxidants, acids, food and food additives etc. When bulk transport, Prohibit the use of cement or wooden boats. Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.
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15 Regulatory information

International chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
Acetonitrile	√	√	√	√	√	√	√	√	√	√	√	√	√
Formaldehyde	√	√	√	√	√	√	√	√	√	√	√	√	√
Acetaldehyde	√	√	√	√	√	√	√	√	√	√	√	√	√
Acrylaldehyde	√	√	√	√	√	√	√	√	√	√	√	√	√
Acetone	√	√	√	√	√	√	√	√	√	√	√	√	√
Propionaldehyde	√	√	√	√	√	√	√	√	√	√	√	√	√
(E)-crotonaldehyde	√	√	√	√	√	√	√	√	√	×	√	√	√
Butyraldehyde	√	√	√	√	√	√	√	√	√	√	√	√	√
Butanone	√	√	√	√	√	√	√	√	√	√	√	√	√
Benzaldehyde	√	√	√	√	√	√	√	√	√	√	√	√	√
Valeraldehyde	√	√	√	√	√	√	√	√	√	×	√	√	√
2-tolualdehyde	√	√	×	×	√	√	×	√	√	×	×	√	√

m-tolualdehyde	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	×	✓	✓
p-tolualdehyde	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	×	✓	✓
Hexanal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	✓
Cyclohexanone	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Methacrylaldehyde	✓	✓	✓	×	×	✓	✓	✓	✓	✓	×	✓	✓	✓

- [A]** China Inventory of Existing Chemical Substances(IECSC)
[B] European Inventory of Existing Commercial Chemical Substances(EC inventory)
[C] United States Toxic Substances Control Act Inventory(TSCA)
[D] Canadian Domestic Substances List(DSL)
[E] New Zealand Inventory of Chemicals(NZIoC)
[F] Philippines Inventory of Chemicals and Chemical Substances(PICCS)
[G] Korea Existing Chemicals Inventory(KECL)
[H] Australian. Inventory of Industrial Chemical (AIICS)
[I] Japan Inventory of Existing & New Chemical Substances(ENCS)
[J] Thailand Existing Chemicals Inventory(TECI)
[K] Mexico National Inventory of Chemical Substances (INSQ)
[L] Russia Inventory of Existing Substances (DRAFT)
[M] Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

List of Chemical Substances under International Conventions

Component	A	B	C
Acetonitrile	×	×	×
Formaldehyde	×	×	×
Acetaldehyde	×	×	×
Acrylaldehyde	×	×	×
Acetone	×	×	×
Propionaldehyde	×	×	×
(E)-crotonaldehyde	×	×	×
Butyraldehyde	×	×	×
Butanone	×	×	×
Benzaldehyde	×	×	×
Valeraldehyde	×	×	×
2-tolualdehyde	×	×	×
m-tolualdehyde	×	×	×
p-tolualdehyde	×	×	×
Hexanal	×	×	×
Cyclohexanone	×	×	×
Methacrylaldehyde	×	×	×

- [A]** The Montreal Protocol on Substances that Deplete the Ozone Layer
[B] Stockholm Convention on Persistent Organic Pollutants (POPs)
[C] Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

US chemical inventory

Component	A	B	C	D	E	F	G	H
Acetonitrile	✓	×	✓	✓	✓	✓	✓	×
Formaldehyde	✓	✓	✓	✓	✓	✓	✓	✓
Acetaldehyde	✓	×	✓	✓	✓	✓	✓	✓
Acrylaldehyde	✓	✓	✓	✓	✓	✓	✓	×
Acetone	×	×	✓	✓	✓	✓	✓	×
Propionaldehyde	✓	×	✓	✓	✓	✓	✓	×
(E)-crotonaldehyde	×	✓	✓	✓	✓	✓	✓	×
Butyraldehyde	×	×	×	✓	✓	✓	✓	×
Butanone	×	×	✓	✓	✓	✓	✓	×
Benzaldehyde	×	×	×	✓	✓	✓	✓	×
Valeraldehyde	×	×	×	✓	✓	✓	✓	×
2-tolualdehyde	×	×	×	×	×	×	×	×
m-tolualdehyde	×	×	×	×	×	×	×	×
p-tolualdehyde	×	×	×	×	×	×	×	×
Hexanal	×	×	×	✓	✓	✓	✓	×
Cyclohexanone	×	×	✓	✓	✓	✓	✓	×
Methacrylaldehyde	×	×	×	✓	✓	✓	✓	×

- [A] US Clean Air Act (CAA)- Section 112, Hazardous Air Pollutants
 [B] US SARA 302- Extremely Hazardous Substance List
 [C] US CERCLA- Hazardous Substances List
 [D] US Massachusetts Right-to-Know Substance List
 [E] US New Jersey Right to Know Hazardous Substance List
 [F] US Pennsylvania Right to Know Hazardous Substance List
 [G] US New York City Right-to-Know Hazardous Substance List
 [H] US California Proposition 65 List

Note:

- “✓” Indicates that the substance included in the regulations.
 “×” No data or not included in the regulations.

16 Other information

Information on revision

Creation Date	2025/11/19
Revision Date	-
Reason for revision	-

Reference

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
 [2] IARC, website: <http://www.iarc.fr/>.
 [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
 [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
 [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
 [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
 [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
 [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC ₅₀	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD ₅₀	Lethal Dose 50%	NTP	National Toxicology Program
EC ₅₀	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC _x	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P _{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor	HCS	Hazard Communication Standard

Disclaimer

This Safety Data Sheet (SDS) was prepared according to OSHA HCS-2024. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.