



SAFETY DATA SHEET

SECTION 1 — IDENTIFICATION

Product identifier: AlbaChem® Super 88 Adhesive

Product Number: 1088

Date Prepared: August 1, 2019

Recommended Use: Adhesive

Recommended Restrictions: None Known

Manufacturer's name and address: Refer to supplier

Supplier name and address:

ALBATROSS USA INC./EXPERT WORLDWIDE

36-41 36th Street
Long Island City, New York
United States
11106
718-392-6272

5439 San Fernando Road West
Los Angeles, California
United States
90039
818-543-5850

Emergency Telephone #: Chemtrec (Day or Night) 800-424-9300
(For Chemical Emergency: Spill, Leak, Fire, Exposure or Accident)

This MSDS complies with 29CFR 19190.1200 (Hazard Communication Standard) and WHMIS regulations.

IMPORTANT: Read this MSDS before handling and disposing of this product. Pass this information on to employees, customers, and users of this product.

SECTION 2 — HAZARD(S) IDENTIFICATION

Hazard Classification

Physical hazards	Flammable aerosols	Category 1
Health hazards	Serious Eye Damage/Eye Irritation	Category 2A
	Toxic to reproduction	Category 2
	Specific Target Organ Toxicity - Repeated Exposure	Category 2
	Aspiration Hazard	Category 1
Environmental hazards	Acute hazards to the aquatic environment	Category 2
	Chronic hazards to the aquatic environment	Category 2

Label Elements



Signal word

Danger

Hazard statement

Extremely flammable aerosol. Causes serious eye irritation. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Toxic to aquatic life with long lasting effects.

Precautionary statement**Prevention**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid release to the environment.

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER/doctor/# Do NOT induce vomiting. IF exposed or concerned: Get medical advice/attention. Collect spillage.

Storage

Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store locked up.

Disposal

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC) None known.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Naphtha (petroleum), hydrotreated light	64742-49-0	10 - <25%
2-Propanone	67-64-1	10 - <20%
Hexane	110-54-3	5 - <10%
Propane	74-98-6	5 - <10%
Butane	106-97-8	5 - <10%
Ethane, 1,1-difluoro-	75-37-6	5 - 10%
Limestone	1317-65-3	0.1 - <1%
Pentane	109-66-0	0.1 - <1%
Silane, dichlorodimethyl-, reaction products with silica	68611-44-9	0.1 - <1%
Cyclohexane	110-82-7	0.1 - <1%
Heptane	142-82-5	0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4 — FIRST AID MEASURES

Ingestion: Call a physician or poison control center immediately. Rinse mouth. Never give liquid to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation: Move to fresh air.

Skin Contact: Wash skin thoroughly with soap and water. If skin irritation occurs: Get medical advice/attention.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

SECTION 5 — FIRE FIGHTING MEASURES

General Fire Hazards: Use water spray to keep fire-exposed containers cool. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Vapors may travel considerable distance to a source of ignition and flash back.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

SECTION 6 — ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures:**

Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind.

Methods and material for containment and cleaning up:

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer.

SECTION 7 — HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes. Wash hands thoroughly after handling. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required.

Conditions for safe storage, including any incompatibilities: Store locked up. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Aerosol Level 31

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION**Control Parameters****Occupational Exposure Limits**

Chemical Identity	Type	Exposure Limit Values	Source
Naphtha (petroleum), hydrotreated light	PEL	100 ppm 400 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (03 2016)
	TWA PEL	300 ppm 1,350 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (01 2015)
	STEL	400 ppm 1,800 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (01 2015)
	TWA	100 ppm 400 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	REL	100 ppm 400 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	ST ESL	3,500 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	350 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
2-Propanone	TWA	100 ppm 400 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	1,000 ppm 2,400 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	750 ppm 1,780 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	PEL	1,000 ppm 2,400 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	250 ppm	US. ACGIH Threshold Limit Values (03 2015)

	TWA	750 ppm 1,800 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	Ceiling	3,000 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	STEL	500 ppm	US. ACGIH Threshold Limit Values (03 2015)
	TWA PEL	500 ppm 1,200 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
Hexane	REL	250 ppm 590 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA PEL	50 ppm 180 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	TWA	50 ppm 180 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	TWA	50 ppm 180 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	PEL	500 ppm 1,800 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	REL	50 ppm 180 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	50 ppm	US. ACGIH Threshold Limit Values (2008)
	AN ESL	200 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	6,200 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	57 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Propane	ST ESL	1,700 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	REL	1,000 ppm 1,800 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	1,000 ppm 1,800 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA PEL	1,000 ppm 1,800 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	TWA	1,000 ppm 1,800 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
Butane	TWA	1,000 ppm 1,800 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	REL	800 ppm 1,900 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	800 ppm 1,900 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	1,000 ppm	US. ACGIH Threshold Limit Values (03 2018)
	TWA	800 ppm 1,900 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	AN ESL	3,000 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	7,100 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	TWA PEL	800 ppm 1,900 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	ST ESL	66,000 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	28,000 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Limestone – Total	REL	10 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Limestone - Respirable.	REL	5 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Limestone - Respirable fraction.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Limestone - Total dust.	PEL	15 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	15 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Limestone - Respirable fraction.	TWA	5 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Limestone - Total dust.	TWA	15 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
Limestone - Respirable fraction.	TWA	5 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
Pentane	TWA	1,000 ppm	US. ACGIH Threshold Limit Values (02 2014)
	Ceiling	610 ppm 1,800 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	REL	120 ppm 350 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	1,000 ppm 2,950 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	600 ppm 1,800 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

STEL	750 ppm 2,250 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
TWA	600 ppm 1,800 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
STEL	750 ppm 2,250 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
TWA PEL	600 ppm 1,800 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
ST ESL	59,000 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
AN ESL	7,100 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
AN ESL	2,400 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
ST ESL	20,000 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Silane, dichlorodimethyl-, reaction products with silica - Particulate.		
ST ESL	27 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Silane, dichlorodimethyl-, reaction products with silica		
TWA	0.8 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Silane, dichlorodimethyl-, reaction products with silica - Particulate.		
AN ESL	2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Silane, dichlorodimethyl-, reaction products with silica		
TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Cyclohexane		
TWA	100 ppm	US. ACGIH Threshold Limit Values (2008)
ST ESL	3,400 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
TWA	300 ppm 1,050 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
TWA	300 ppm 1,050 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
REL	300 ppm 1,050 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
PEL	300 ppm 1,050 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
TWA PEL	300 ppm 1,050 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
AN ESL	340 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
AN ESL	100 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
ST ESL	1,000 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Heptane		
TWA	400 ppm 1,600 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
STEL	500 ppm 2,000 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
REL	85 ppm 350 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
PEL	500 ppm 2,000 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
STEL	500 ppm 2,000 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
TWA	400 ppm	US. ACGIH Threshold Limit Values (02 2012)
STEL	500 ppm	US. ACGIH Threshold Limit Values (02 2012)
TWA	400 ppm 1,600 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
ST ESL	10,000 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
AN ESL	2,700 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
ST ESL	2,400 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Ceiling Time	440 ppm 1,800 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
TWA PEL	400 ppm 1,600 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
STEL	500 ppm 2,000 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)

	AN ESL	660 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Phenol	TWA	5 ppm	US. ACGIH Threshold Limit Values (2008)
	REL	5 ppm 19 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	Ceil_Time	15.6 ppm 60 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	5 ppm 19 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	5 ppm 19 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	5 ppm 19 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	TWA PEL	5 ppm 19 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	ST ESL	39 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	150 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	0.86 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Benzene, ethenyl-	AN ESL	3.3 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	TWA	20 ppm	US. ACGIH Threshold Limit Values (2008)
	STEL	40 ppm	US. ACGIH Threshold Limit Values (2008)
	REL	50 ppm 215 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL	100 ppm 425 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	50 ppm 215 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	100 ppm 425 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	Ceiling	200 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	MAX. CONC	600 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
Benzene, ethyl-	TWA	50 ppm 215 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	100 ppm 425 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	TWA PEL	50 ppm 215 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	Ceiling	500 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	STEL	100 ppm 425 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	ST ESL	26 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	140 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	TWA	2 ppm	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values (03 2018)
	AN ESL	33 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	110 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
Benzene, ethyl-	TWA	100 ppm 435 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	125 ppm 545 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL	26,000 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	570 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	6,000 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	130 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	100 ppm 435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	30 ppm 130 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2013)

STEL	125 ppm 545 mg/m3
PEL	100 ppm 435 mg/m3
STEL	125 ppm 545 mg/m3
TWA	20 ppm
TWA PEL	5 ppm 22 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards (2005)
 US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
 US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
 US. ACGIH Threshold Limit Values (12 2010)
 US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2013)

Biological Limit Values

Chemical Identity

Chemical Identity	Exposure Limit Values	Source
2-Propanone (acetone: Sampling time: End of shift.)	25 mg/l (Urine)	ACGIH BEL (03 2015)
Hexane (2,5-Hexanedion, without hydrolysis: Sampling time: End of shift.)	0.5 mg/l (Urine)	ACGIH BEL (03 2018)
Phenol (Phenol with hydrolysis: Sampling time: End of shift.)	250 mg/g (Creatinine in urine)	ACGIH BEL (03 2013)
Benzene, ethenyl- (Mandelic acid plus phenylglyoxylic acid: Sampling time: End of shift.)	400 mg/g (Creatinine in urine)	ACGIH BEL (03 2013)
Benzene, ethenyl- (styrene: Sampling time: End of shift.)	40 µg/l (Urine)	ACGIH BEL (03 2015)
Benzene, ethyl- (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.)	0.15 g/g (Creatinine in urine)	ACGIH BEL (02 2014)

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

General information: Provide easy access to water supply and eye wash facilities. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin Protection

Hand Protection: No data available.

Other: No data available.

Respiratory Protection: In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

Hygiene measures: Avoid contact with eyes. Observe good industrial hygiene practices. When using do not smoke. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state:	liquid
Form:	Spray Aerosol
Color:	No data available.

Odor: No data available.

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: No data available.

Initial boiling point and boiling range: No data available.

Flash Point: -104.44 °C

Evaporation rate: No data available.

Flammability (solid, gas): No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%): No data available.

Flammability limit - lower (%): No data available.

Explosive limit - upper (%): No data available.

Explosive limit - lower (%): No data available.

Vapor pressure: 3,033.6932 - 4,412.6446 hPa (20 °C)

Vapor density: No data available.

Density: No data available.

Relative density:	No data available.
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

SECTION 10 — STABILITY AND REACTIVITY

Reactivity: No data available.
Chemical Stability: Material is stable under normal conditions.
Possibility of hazardous reactions: No data available.
Conditions to avoid: Avoid heat or contamination.
Incompatible Materials: No data available.
Hazardous Decomposition Products: No data available.

SECTION 11 — TOXICOLOGICAL PROPERTIES

Information on likely routes of exposure

Inhalation: No data available. **Skin Contact:** No data available. **Eye contact:** No data available.
Ingestion: No data available.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No data available. **Skin Contact:** No data available. **Eye contact:** No data available.
Ingestion: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Naphtha (petroleum), hydrotreated light LD 50 (Rat): > 5,000 mg/kg

2-Propanone LD 50 (Rat): 5,800 mg/kg

Hexane LD 50: > 2,000 mg/kg

Limestone LD 50: > 2,000 mg/kg

Pentane LD 50 (Rat): > 2,000 mg/kg, LD 50 (Rat): > 5,000 mg/kg, LD 50 (Rat): > 5,000 mg/kg

Cyclohexane LD 50 (Rat): > 5,000 mg/kg

Heptane LD 50 (Rat): > 5,000 mg/kg

Dermal

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Naphtha (petroleum), hydrotreated light LD 50 (Rabbit): > 3,750 mg/kg

2-Propanone LD 50 (Rabbit): > 7,426 mg/kg

Hexane LD 50 (Rabbit): > 2,000 mg/kg

Limestone LD 50: > 2,000 mg/kg

Pentane LD 50: > 2,000 mg/kg

Cyclohexane LD 50 (Rabbit): > 2,000 mg/kg

Heptane LD 50 (Rabbit): > 2,000 mg/kg

Inhalation

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Naphtha (petroleum), hydrotreated light LOAEL (Human): 2,400 mg/m³, LC 50 (Rat): > 7,630 mg/m³, LC 50: > 5 mg/l

2-Propanone LC 50 (Rat): 50.1 mg/l, LC 50: > 5 mg/l

Hexane LC 50 (Rat): > 31.86 mg/l, LC 50: > 5 mg/l

Propane LC 50 (Mouse): 1,237 mg/l

Butane LC 50 (Mouse): 1,237 mg/l

Limestone LC 50: > 5 mg/l, LC 50: > 20 mg/l

Pentane LC 50 (Rat): > 25.3 mg/l, LC 50: > 5 mg/l

Cyclohexane LC 50 (Rat): > 32,880 mg/m³

Heptane LC 50 (Rat): > 29.29 mg/l

Repeated dose toxicity

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light LOAEL (Rat(Female, Male), Oral, 13 Weeks): 1,250 mg/kg Oral Read-across based on grouping of substances (category approach), Key study NOAEL (Rat(Female, Male), Dermal, 28 d): > 375 mg/kg Dermal Experimental result, Supporting study NOAEL (Rat(Female, Male), Inhalation): 10,000 mg/m³ Inhalation Experimental result, Key study

2-Propanone NOAEL (Rat(Male), Oral, 13 Weeks): 10,000 ppm(m) Oral Experimental result, Key study

Hexane NOAEL (Mouse(Male), Inhalation, 13 Weeks): 500 ppm(m) Inhalation Experimental result, Key study LOAEL (Mouse(Male), Inhalation, 13 Weeks): 1,000 ppm(m) Inhalation Experimental result, Key study LOAEL (Rat(Male), Inhalation, 16 Weeks): 3,000 ppm(m) Inhalation Experimental result, Key study LOAEL (Mouse(Female), Inhalation, 13 Weeks): 500 ppm(m) Inhalation Experimental result, Key study

Propane NOAEL (Rat(Female, Male), Inhalation, >= 28 d): 4,000 ppm(m) Inhalation Experimental result, Key study LOAEL (Rat(Female, Male), Inhalation, >= 28 d): 12,000 ppm(m) Inhalation Experimental result, Key study

Butane NOAEL (Rat(Female, Male), Inhalation, >= 28 d): 4,000 ppm(m) Inhalation Experimental result, Key study LOAEL (Rat(Female, Male), Inhalation, >= 28 d): 12,000 ppm(m) Inhalation Experimental result, Key study

Pentane LOAEL (Rat(Male), Inhalation): 3,000 ppm(m) Inhalation Experimental result, Supporting study NOAEL (Rat, Inhalation): 3,000 ppm(m) Inhalation Experimental result, Supporting study NOAEL (Rat, Inhalation): 30 mg/l Inhalation Read-across based on grouping of substances (category approach), Key study NOAEL (Rat(Female, Male), Inhalation, 13 Weeks): >= 6,646 ppm(m) Inhalation Read-across based on grouping of substances (category approach), Key study NOAEL (Rat(Female, Male), Inhalation): 20,000 mg/m³ Inhalation Experimental result, Key study

Cyclohexane NOAEL (Rat(Female, Male), Inhalation, 13 - 18 Weeks): 7,000 ppm(m) Inhalation Experimental result, Key study NOAEL (Mouse(Female, Male), Inhalation, 13 - 18 Weeks): 500 ppm(m) Inhalation Experimental result, Key study

Heptane NOAEL (Rat(Male), Inhalation): 12,470 mg/m³ Inhalation Experimental result, Key study

Skin Corrosion/Irritation

Product: No data available.

Specified substance(s):

2-Propanone in vivo (Rabbit): Not irritant Experimental result, Supporting study

Pentane in vivo (Rabbit): Not classified as an Irritant Experimental result, Key study

Cyclohexane Review (Various): Irritating. in vivo (Rabbit): Not irritant Experimental result, Weight of Evidence study

Heptane in vivo (Rabbit): Irritating Read-across based on grouping of substances (category approach), Key study

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light Rabbit, 24 - 72 hrs: Not irritating

2-Propanone Irritating. Rabbit, 24 hrs: Minimum grade of severe eye irritant

Hexane Rabbit, 1 - 72 hrs: Not irritating

Pentane Rabbit, 48 hrs: Not irritating, Rabbit, 24 hrs: Not irritating, Rabbit, 1 hrs: Not irritating, Rabbit, 1 hrs: Not irritating

Heptane Rabbit, 24 - 72 hrs: Not irritating

Respiratory or Skin Sensitization

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light Skin sensitization:, in vivo (Guinea pig): Non sensitising

2-Propanone Skin sensitization:, in vivo (Guinea pig): Non sensitising

Pentane Skin sensitization:, in vivo (Guinea pig): Non sensitising

Cyclohexane Skin sensitization:, in vivo (Guinea pig): Non sensitising

Heptane Skin sensitization:, in vivo (Guinea pig): Non sensitising

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro Product: No data available., **In vivo Product:** No data available.

Reproductive toxicity

Product: No data available.

Specified substance(s): Hexane Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specified substance(s):

2-Propanone Inhalation - vapor: Narcotic effect. - Category 3 with narcotic effects.

Hexane Inhalation - vapor: Narcotic effect. - Category 3 with narcotic effects.

Cyclohexane Inhalation - vapor: Narcotic effect. - Category 3 with narcotic effects.

Heptane Narcotic effect. - Category 3 with narcotic effects.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Specified substance(s): Hexane Inhalation - vapor: Nervous System - Category 2

Aspiration Hazard

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light May be fatal if swallowed and enters airways.

Hexane May be fatal if swallowed and enters airways.

Cyclohexane May be fatal if swallowed and enters airways.

Heptane May be fatal if swallowed and enters airways.

Other effects: No data available.

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light LC 50 (96 h): 8.41 mg/l Experimental result, Key study

2-Propanone LC 50 (Oncorhynchus mykiss, 96 h): 5,540 mg/l Experimental result, Key study

Hexane LC 50 (Fathead minnow (Pimephales promelas), 96 h): 2.101 - 2.981 mg/l Mortality

Propane LC 50 (Various, 96 h): 147.54 mg/l QSAR QSAR, Key study

Butane LC 50 (Various, 96 h): 147.54 mg/l QSAR QSAR, Key study

Pentane NOAEL (Oncorhynchus kisutch, 96 h): > 100 mg/l Experimental result, Weight of Evidence study, LL 50 (Oncorhynchus mykiss, 96 h): 27.55 mg/l QSAR QSAR, Key study, LC 50 (Oncorhynchus mykiss, 96 h): 4.26 mg/l Experimental result, Supporting study

Cyclohexane LC 50 (Pimephales promelas, 96 h): 4.53 mg/l Experimental result, Key study

Heptane LC 50 (Mozambique tilapia (Tilapia mossambica), 96 h): 375 mg/l Mortality

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light EC 50 (Daphnia magna, 48 h): 4.5 mg/l Experimental result, Key study

2-Propanone LC 50 (Daphnia pulex, 48 h): 8,800 mg/l Experimental result, Key study

Hexane EC 50 (Daphnia magna, 48 h): 21.85 mg/l QSAR QSAR, Key study, LC 50 (Water flea (Daphnia magna), 24 h): > 50 mg/l Mortality

Butane LC 50 (Daphnia sp., 48 h): 69.43 mg/l QSAR QSAR, Key study

Pentane EC 50 (Daphnia magna, 48 h): 48.11 mg/l QSAR QSAR, Key study, EC 50 (Daphnia magna, 48 h): 2.8 mg/l QSAR QSAR, Supporting study, EC 50 (Daphnia magna, 48 h): 2.7 mg/l Experimental result, Supporting study, EC 50 (Daphnia magna, 48 h): 9.1 mg/l Experimental result, Supporting study

Cyclohexane EC 50 (Daphnia magna, 48 h): 0.9 mg/l Experimental result, Key study

Heptane EC 50 (Daphnia magna, 48 h): 1.5 mg/l Experimental result, Key study

Chronic hazards to the aquatic environment:

Fish

Product: NOEC : Estimated < 1 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light EC 50 (Daphnia magna): 10 mg/l Experimental result, Key study, NOAEL (Daphnia magna): 2.6 mg/l Experimental result, Key study

2-Propanone LOAEL (Daphnia magna): 2,212 mg/l Experimental result, Key study, NOAEL (Daphnia magna): 2,212 mg/l Experimental result, Key study

Hexane NOAEL (Daphnia magna): 4.888 mg/l QSAR QSAR, Key study

Pentane NOAEL (Daphnia magna): 10.76 mg/l QSAR QSAR, Key study

Heptane NOAEL (Daphnia magna): 0.17 mg/l Read-across based on grouping of substances (category approach), Key study EC 50 (Daphnia magna): 0.23 mg/l Read-across based on grouping of substances (category approach), Key study

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light 90.35 % (28 d) Detected in water. Experimental result, Supporting study

2-Propanone 90.9 % (28 d) Detected in water. Experimental result, Key study

Hexane 81 % Detected in water. Read-across based on grouping of substances (category approach), Key study

Propane 100 % (385.5 h) Detected in water. Experimental result, Key study, 50 % (3.19 d) Detected in water. QSAR, Weight of Evidence study

Butane 100 % (385.5 h) Detected in water. Experimental result, Key study, 50 % (3.19 d) Detected in water. QSAR, Weight of Evidence study

Pentane 87 % Detected in water. Experimental result, Key study, 3 % Detected in water. Experimental result, Key study, 48.8 % Detected in water. Experimental result, Key study, 71.43 % (28 d) Detected in water. Read-across based on grouping of substances (category approach), Supporting study, 65.5 % Detected in water. Experimental result, Key study

Cyclohexane 77 % (28 d) Detected in water. Experimental result, Key study

Heptane 70 % Detected in water. Experimental result, Key study

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light Bioconcentration Factor (BCF): 10 - 2,500 Aquatic sediment Estimated by calculation, Key study

2-Propanone Haddock, adult, Bioconcentration Factor (BCF): 0.69 Aquatic sediment Experimental result, Not specified

Hexane Pimephales promelas, Bioconcentration Factor (BCF): 501.19 Aquatic sediment QSAR, Key study

Pentane Pimephales promelas, Bioconcentration Factor (BCF): 171 Aquatic sediment QSAR, Key study

Cyclohexane Cyprinus carpio, Bioconcentration Factor (BCF): 37 - 129 Aquatic sediment Experimental result, Supporting study

Heptane Bioconcentration Factor (BCF): 552 Aquatic sediment Estimated by calculation, Key study

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

Naphtha (petroleum), hydrotreated light Log Kow: > 2.4 - < 5.7 23 °C Yes Experimental result, Key study, Log Kow: 2.2 - 5.2 23 °C Yes Experimental result, Key study, Log Kow: 2.2 - 6.1 23 °C Yes Experimental result, Key study

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Naphtha (petroleum), hydrotreated light No data available.

2-Propanone No data available.

Hexane No data available.

Propane No data available.

Butane No data available.

Limestone No data available.

Pentane No data available.

Silane, dichlorodimethyl-, reaction products with silica No data available.

Cyclohexane No data available.

Heptane No data available.

Other adverse effects: Toxic to aquatic life with long lasting effects.

SECTION 13 — DISPOSAL CONSIDERATIONS

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated Packaging: No data available.

SECTION 14 — TRANSPORTATION INFORMATION

DOT

UN Number: UN 1950

UN Proper Shipping Name: Aerosols, flammable

Transport Hazard Class(es)

Class: 2.1

Label(s): –

Packing Group: II**Marine Pollutant:** No**Environmental Hazards:** No**Marine Pollutant** No**Special precautions for user:** Not regulated.**IMDG****UN Number:** UN 1950**UN Proper Shipping Name:** Aerosols, flammable**Transport Hazard Class(es)**

Class: 2

Label(s): –

EmS No.: F-D, S-U

Packing Group: –**Environmental Hazards:** Yes**Marine Pollutant** No**Special precautions for user:** Not regulated.**IATA****UN Number:** UN 1950**Proper Shipping Name:** Aerosols, flammable**Transport Hazard Class(es):**

Class: 2.1

Label(s): –

Packing Group: –**Environmental Hazards:** Yes**Marine Pollutant** No**Special precautions for user:** Not regulated.**Cargo aircraft only:** Allowed.**SECTION 15 — REGULATORY INFORMATION****US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)****US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity	Reportable quantity
Methane, 1,1'-oxybis-	lbs. 100
2-Propanone	lbs. 5000
Hexane	lbs. 5000
Propane	lbs. 100
Butane	lbs. 100
Cyclopentane, methyl-	lbs. 100
Pentane	lbs. 100
Cyclohexane	lbs. 1000
Heptane	lbs. 100
Phenol	lbs. 1000
Benzene, ethenyl-	lbs. 1000
Benzene, ethyl-	lbs. 1000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Fire Hazard
 Immediate (Acute) Health Hazards
 Delayed (Chronic) Health Hazard
 Flammable aerosol
 Serious Eye Damage/Eye Irritation
 Toxic to reproduction
 Specific Target Organ Toxicity - Repeated Exposure
 Aspiration Hazard

SARA 302 Extremely Hazardous Substance

Chemical Identity	Reportable quantity	Threshold Planning Quantity
2-Propanone		
Hexane		
Ethane, 1,1-difluoro-		
Phenol	lbs. 1000	---

SARA 304 Emergency Release Notification

Chemical Identity	Reportable quantity
Methane, 1,1'-oxybis-	lbs. 100
2-Propanone	lbs. 5000
Hexane	lbs. 5000
Ethane, 1,1-difluoro-	
Propane	lbs. 100
Butane	lbs. 100
Cyclopentane, methyl-	lbs. 100
Pentane	lbs. 100
Cyclohexane	lbs. 1000
Heptane	lbs. 100
Phenol	lbs. 1000
Benzene, ethenyl-	lbs. 1000
Benzene, ethyl-	lbs. 1000

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
Phenol	lbs
Naphtha (petroleum), hydrotreated light	10000 lbs
2-Propanone	10000 lbs
Hexane	10000 lbs
Propane	10000 lbs
Butane	10000 lbs
Limestone	10000 lbs
Pentane	10000 lbs
Silane, dichlorodimethyl-, reaction products with silica	10000 lbs
Cyclohexane	10000 lbs
Heptane	10000 lbs
Benzene, ethenyl-	10000 lbs
Benzene, ethyl-	10000 lbs

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Hexane	lbs	lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

US State Regulations

US. California Proposition 65 This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Hexane Male reproductive toxin. 12 2017

Benzene, ethenyl- Carcinogenic. 04 2016

Benzene, ethyl- Carcinogenic. 05 2011

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Naphtha (petroleum), hydrotreated light

Methane, 1,1'-oxybis-

2-Propanone

Hexane

Ethane, 1,1-difluoro-

Propane

Butane

Cyclopentane, methyl-

US. Massachusetts RTK - Substance List

Chemical Identity

Phenol

Benzene, ethenyl-

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

Naphtha (petroleum), hydrotreated light

Methane, 1,1'-oxybis-

2-Propanone

Hexane

Propane

Butane

Cyclopentane, methyl-

US. Rhode Island RTK No ingredient regulated by RI Right-to-Know Law present.

International regulations

Montreal protocol

2-Propanone

Hexane

Ethane, 1,1-difluoro- Group I Annex F

Stockholm convention

2-Propanone

Hexane

Ethane, 1,1-difluoro-

Rotterdam convention

2-Propanone

Hexane

Ethane, 1,1-difluoro-

Kyoto protocol

Inventory Status:

Australia AICS: On or in compliance with the inventory

Canada DSL Inventory List: On or in compliance with the inventory

EINECS, ELINCS or NLP: Not in compliance with the inventory.

Japan (ENCS) List: Not in compliance with the inventory.

China Inv. Existing Chemical Substances: Not in compliance with the inventory.

Korea Existing Chemicals Inv. (KECI): Not in compliance with the inventory.

Canada NDSL Inventory: Not in compliance with the inventory.

Philippines PICCS: On or in compliance with the inventory

US TSCA Inventory: On or in compliance with the inventory

New Zealand Inventory of Chemicals: On or in compliance with the inventory

Japan ISHL Listing: Not in compliance with the inventory.

Japan Pharmacopoeia Listing: Not in compliance with the inventory.

Mexico INSQ: Not in compliance with the inventory.

Ontario Inventory: On or in compliance with the inventory

Taiwan Chemical Substance Inventory: On or in compliance with the inventory

SECTION 16 — OTHER INFORMATION

Issue Date: 08/01/2019

Revision Information: No data available.

Version #: 1.0

Further Information: No data available.

Disclaimer: This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.