

Safety Data Sheet (SDS) Chemtane 2 Blended in Propane

Creation date: 30.01.2012
Revision date: 2.28.2017

Version 1.7

SP / E

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

1.1. Product identifier

Product name

Chemtane 2 Alkane hydrocarbons (C₄ – C₈) in Propane
Formulated by Chemtane Energy LLC
Chemtane

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

Relevant identified uses: Industrial and professional.

Uses advised against: Consumer use.

1.3. Details of the supplier of the Safety Data Sheet (SDS)

Company identification

Chemtane Energy LLC, Suite 3
10902 Interstate-10 East, Baytown, TX 77523
Phone: (281) 573-1100; Fax (281) 573-1102
Contact in USA: Raymond Davis 281 382-1062; 800 776-1485
e-mail address rdavis@chemtane2.com

Website: <http://www.chemtane2.com>

Customer Service: customerservice@chemtane2.com

Person responsible for placing on market:

Raymond Davis
PO Box 2210
Baytown, Texas 77522
USA
800-776-1485; Cell 281-382-1062

SDS preparation: James Boucher

1.4. Emergency telephone number

Spill Chemtrec (800) 424-9300(Account No. 11781)
Emergency Number 24 hr. (703) 527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification acc. Regulation

- EXTREMELY FLAMMABLE LIQUID and VAPOR
- MAY EXCLUDE OXYGEN AVAILABLE FOR BREATHING
- MAY NOT GIVE LEAK DETECTION BY SENSE OF SMELL
- CONTENTS UNDER PRESSURE

HMIS Rating: HEALTH 1
FLAMMABILITY 4.
REACTIVITY 0

NFPA RATING HEALTH 1
FLAMMABILITY 4.
REACTIVITY 0

Classification

Extremely flammable.
Harmful: may cause lung damage if swallowed.
Repeated exposure may cause skin dryness or cracking.
Vapors may cause drowsiness and dizziness.
Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

2.2. Label elements -Labeling Pictograms



- Signal word

NFPA Pictogram
Danger

- Hazard Statements

H224 Extremely flammable liquid and vapor
H304 May be fatal if swallowed and enters airways
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.

- Precautionary Statements

Precautionary Statement Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground / bond container and receiving equipment.
P241 Use explosion-proof electrical, ventilating, and lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist / vapors.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves and eye / face protection.

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Precautionary Statement Response

| | |
|--------------------|---|
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower |
| P304 + P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P312 | Call a POISON CENTER or doctor/physician if you feel unwell. |
| P331 | Do NOT induce vomiting. |
| P370 + P378 | In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO ₂) for extinction. Collect spillage. |
| P391 | Collect spillage. |

Precautionary Statement Storage

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

P405 Store locked up.

Precautionary Statement Disposal

P501 Dispose of contents and container in accordance with local regulations.

2.3. Other hazards

Contact with liquid may cause inflammation or dry skin.

SECTION 3: Composition/information on ingredients

Substance / Mixture: Mixture.

3.1. Substances

| Name | CAS No. | EC No. | Content | Classification |
|--------------------|------------|--------------|---------|----------------|
| Propane | 74-98-6 | 200-827-9 | > 99 % | |
| n-Pentane | 109-66-0 | 203-692-4 | < 1 % | |
| Isohexanes | 73513-42-5 | 601-007-00-7 | < 1 % | |
| 2-Propanol | 67-63-0 | 200-661-7 | < 1 % | |
| Soltrol 10 | 70024-92-9 | 274-273-1 | < 1 % | |
| Cyclopentane | 287-92-3 | 206-016-6 | < 1 % | |
| 2-Methylpentane | 107-83-5 | 203-523-4 | < 1 % | |
| Isopentane | 78-78-4 | 201-142-8 | < 1 % | |
| 2,3-Dimethylbutane | 79-29-8 | 201-193-6 | < 1 % | |

REACH Registration number: Not Required

Contains no other components or impurities which will influence the classification of the product.

3.2. Mixtures

See 3.1 above for composition.

SECTION 4: First aid measures

4.1. Description of first aid measures

First Aid General Information:

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

First Aid Inhalation:

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call Doctor. Apply artificial respiration if not breathing.

First Aid Skin / Eye:

In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical assistance. Immediately flush eyes with water for at least 15 minutes.

First Aid Ingestion:

Do not let victim drink anything.
Do NOT induce vomiting.
Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. May have damaging effect on respiratory system, central nervous system (CNS) and liver. Depression of CNS. Symptoms may include dizziness, headache, nausea, unconsciousness, irritation of the mucous membranes and dry coughs. Irregular cardiac activity.

4.3. Indication of any immediate medical attention and special treatment needed

Get immediate medical advice/attention.

SECTION 5: Fire fighting measures

5.1. Extinguishing media

Suitable extinguishing media

All known extinguishants can be used.

Unsuitable extinguishing media

Do not use a solid water stream.

5.2. Special hazards arising from the substance or mixture

Specific hazards

Flash Point -150_F (-101_C) LEL 2.3% UEL 9.4%

Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products

If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition:
Carbon dioxide, Carbon monoxide.

5.3. Advice for fire-fighters

Specific methods

If possible, stop flow of product. Move container away or cool with water from a protected position. If leaking do not extinguish a flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire. Prevent water used in emergency cases from entering sewers and drainage systems.

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Special protective equipment for fire-fighters

Use self-contained breathing apparatus and chemically protective clothing. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to EN 469 will provide a basic level of protection from chemical incidents. EN 469:2005: Protective clothing for fire-fighters. Performance requirements for protective clothing for firefighting.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Consider the risk of potentially explosive atmospheres. Evacuate area. Ensure adequate air ventilation. Use self-contained breathing apparatus and chemically protective clothing. Eliminate ignition sources. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.2. Environmental precautions

Try to stop release.

6.3. Methods and material for containment and Cleaning up

Ventilate area. Keep away from ignition sources (including static discharges). Evacuate area. Prevent evaporation by covering with foam. Absorb excess liquid spillage on inorganic adsorbent material such as fine sand, brick dust etc. Place spent adsorbent in sealed packages and contact specialist waste disposal contractor.

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Only experienced and properly instructed persons should handle the product. The substance must be handled in accordance with good industrial hygiene and safety procedures. Avoid contact with skin. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your supplier if in doubt. Take precautionary measures against static discharges. Ensure equipment is adequately earthed. Purge air from system before introducing product. Do not smoke while handling product. Assess the risk of potentially explosive atmosphere and the need for explosion-proof equipment. Consider the use of only non-sparking tools. Ensure the complete system has been (or is regularly) checked for leaks before use. Refer to supplier's handling instructions. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.

Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences

any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer products from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

7.2. Conditions for safe storage, including any incompatibilities

Observe all regulations and local requirements regarding storage of containers. Segregate from other oxidants in store. Keep container below 35°C in a well ventilated place. Containers should be stored in the vertical position and properly secured to prevent falling over. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials. All electrical equipment in the storage areas should be compatible with the risk of potentially explosive atmosphere. Containers should not be stored in conditions likely to encourage corrosion.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit value

| Value type | value | Note |
|------------|-------|------|
|------------|-------|------|

OSHA & NIOSH Levels

| Product/ingredient name | Type | Exposure Long Term | Value ppm mg/m ³ | Population |
|-------------------------|------|--------------------|-----------------------------|------------|
| Propane OSHA | TWA | Inhalation | 1000 ppm | Workers |
| NIOSH | PEL | Inhalation | 1000 mg/m ³ | Workers |
| OSHA | TWA | Inhalation | 1800 mg/m ³ | Workers |
| NIOSH | PEL | Inhalation | 1800 mg/m ³ | Workers |
| | | Oral | NE | |

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Predicted No Effect Concentrations

Not applicable

8.2. Exposure controls

Appropriate engineering controls

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Gas detectors should be used when quantities of flammable gases/vapors may be released. Consider work permit system e.g. for maintenance activities. Systems under pressure should be regularly checked for leakages. Provide adequate general or local ventilation. Keep concentrations well below occupational exposure limits.

Personal protective equipment

Eye and face protection

Protect eyes, face and skin from liquid splashes. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wear a face -shield when transfilling and breaking transfer connections. Safety eyewear, goggles or face-shield to EN166 should be used to avoid exposure to liquid splashes. Full-face mask recommended.

Guideline:

CEN: EN136 Respiratory protective devices. Full face masks. Requirements, testing, marking.

Skin protection

Hand protection

Advice:

Wear cold insulating gloves.

Guideline:

EN 511 Protective gloves against cold.

Chemically resistant gloves complying with EN 374 should be worn at all times when handling chemical products if a risk assessment indicates this is necessary

Material:

Nitrile

Guideline:

EN 374-1/2/3 Protective gloves against chemicals and microorganisms

Body protection

Protect eyes, face and skin from contact with product. Keep suitable chemically resistant protective clothing readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Guideline:

EN 943: Protective clothing against liquid and gaseous chemicals, aerosols and solid particles.

Other protection

Wear flame resistant/retardant clothing. Take precautionary measures against static discharges. Wear working gloves and safety shoes when handling cylinders.
ISO 20345 Safety footwear

Respiratory protection

Keep self contained breathing apparatus readily available for emergency use. Use SCBA in the event of high concentrations. The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated

exposure levels, the hazards of the product and the safe working limits of the selected RPD. When allowed by a risk assessment Respiratory Protective Equipment (RPE) may be used.

Guideline:

EN 136: Respiratory protective devices. Full face masks. Requirements, testing, marking.

Material:

Filter AX

Guideline:

EN 14387: Respiratory protective devices. Gas filter(s) and combined filter(s). Requirements, testing, marking

Environmental Exposure Controls

Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste product treatment. Provide adequate general or local ventilation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General information

Appearance/Color: Colorless liquid.

Odor: Faint. Poor warning properties at low concentrations.

Odor threshold:

Odor threshold is subjective and inadequate to warn for over exposure.

Melting point: -135°C

Boiling point: -42°C (-43.6 °F)

Flash point: -101 °C (-150 °F)

Flammability range: 1,1 %(V) – 7,8%(V)

Vapour Pressure 21,1 °C: 8,5299 bar

Relative density, gas: 2,48

Solubility in water: 30 mg/l @ 10 °C

Partition coefficient: n-octanol/water: No data available.

Autoignition temperature: 450 °C

Relative density, liquid: 0,5853

Viscosity 0,11 cp at -60 °C

9.2. Other information

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10: Stability and reactivity

10.1. Reactivity

Unreactive under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can form potential explosive atmosphere in air., May react violently with oxidants.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

10.5. Incompatible materials

Air, Oxidizer.

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10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition:
Carbon dioxide, Carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

Value: LD50
Species: Rat
Value in non-standard unit: > 2.000 mg/kg
Slightly toxic.

Acute inhalation toxicity

Value: LC50
Species: Rat
Value in non-standard unit: > 25,3 mg/l
Slightly toxic.

Acute dermal toxicity

Slightly toxic

Acute toxicity other routes

May be fatal if swallowed and enters airways.

Skin irritation

Not classified as an irritant. Repeated exposure may cause skin dryness or cracking. May cause dermatitis by skin contact.

Eye irritation

Not classified as an irritant. May cause mild, short-term discomfort to eyes.

Sensitization

This substance is not classified as a sensitizer.

Repeated dose toxicity

Not expected to cause damage to organs from prolonged or repeated exposure.

Assessment mutagenicity

There is no evidence of mutagenic potential.

Assessment carcinogenicity

No evidence of carcinogenic effects.

Assessment toxicity to reproduction

No indication of toxic effects.

Assessment teratogenicity

No indication of teratogenic effects.

SECTION 12: Ecological information

12.1. Toxicity

May cause long-term adverse effects in the aquatic environment.

Acute and prolonged toxicity fish

Species: Rainbow trout (*Oncorhynchus mykiss*)
Exposure time: 96 h
Value type: LC50

Value in standard unit mg/l: 4,26 mg/l

Acute toxicity aquatic invertebrates

Species: *Daphnia magna*
Exposure time: 48 h
Value type: EC50
Value in standard unit mg/l: 2,7 mg/l

Toxicity aquatic plants

Species: Algae
Exposure time: 72 h
Value type: NOEC
Value in standard unit mg/l: 7,51 mg/l
Species: Algae
Exposure time: 72 h

Value type: EC50

Value in standard unit mg/l: 10,7 mg/l

12.2. Persistence and degradability

Atmospheric degradation

The substance degrades rapidly in the atmosphere.

Readily biodegradable

Photo degradation

Half life (direct photolysis): 2,3 d

Non-significant photolysis.

Stability in water

Degradation: 71,4%

Duration: 28 days

Non-significant hydrolysis

12.3. Bioaccumulative potential

Not determined

12.4. Mobility in soil

Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste product should be flared through a suitable burner with flash back arrestor. Toxic and corrosive gases formed during combustion should be scrubbed before discharge to atmosphere. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required. Dispose of container via supplier only.

SECTION 14: Transport information

ADR/RID

14.1. UN number 1075

14.2. UN proper shipping name

LIQUEFIED PETROLEUM GAS (PROPANE)

14.3. Transport hazard class(es)

Class: 2.1

Classification Code: F1

Emergency Action Code: 3YE

Tunnel code: (D/E)

14.4. Packing group PG 11

14.5. Environmental hazards

Environmentally Hazardous.

14.6. Special precautions for user

None.

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IMDG**14.1. UN number** 1075**14.2. UN proper shipping name**
LIQUEFIED PETROLEUM GAS (PROPANE)**14.3. Transport hazard class(es)**
Class: 2.1

EmS: F-E,S-D

14.4. Packing group PG II**14.5. Environmental hazards**
Environmentally Hazardous**14.6. Special precautions for user**
None.**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
Substance name: PROPANE
Ship type required: 3
Pollution category: Y**IATA****14.1. UN number**
1075**14.2. UN proper shipping name**
LIQUEFIED PETROLEUM GAS (PROPANE)**14.3. Transport hazard class(es)**
Class: 3
Labels: 3**14.4. Packing group (Packing Instruction)****14.5. Environmental hazards**
Environmentally Hazardous.**14.6. Special precautions for user**
None.**Other transport information**

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the cylinder valve is closed and not leaking. Ensure that the valve outlet cap nut or plug (where provided) is correctly fitted. Ensure that the valve protection device (where provided) is correctly fitted. Ensure adequate ventilation. Ensure compliance with applicable regulations.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**
Seveso Directive 96/82/EC: Covered.**15.2. Chemical safety assessment**
CSA has been carried out**SECTION 16: Other information**

Ensure all national/local regulations are observed. Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Advice

While proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Details given in this document are believed to be correct at the time of going to press.

Further information**Note:**

When using this document care should be taken, as the decimal sign and its position complies with rules for the structure and drafting of international standards, and is a

comma on the line.

As an example 2,000 is two (to three decimal places) and not two thousand, whilst 1.000 is one thousand and not one (to three decimal places).

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