MATERIAL SAFETY DATA SHEET

Section 1: Identification

Edit Foundation: GHS Fifth Revised Edition
Edit Date: October 30, 2015
Available Period: See Section 16 for more description
Product Name: MAPP GAS
Chemical Name: PROPYLENE/PROPANE AND DIMETHYL ETHER
Product Use: Fuel
UN Proper Shipping Name: LIQUEFIED GAS, FLAMMABLE
Manufactured by: T.T. INTERNATIONAL CO.,LTD
UNIT 1,25F SUPER TOWER 2,ETON PLACE,NO.280 CHANGJIANG ROAD, ZHONGSHAN DISTRICT,DALIAN 116001,CHINA
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Section 2: Hazard Identification

GHS Classification:

Health	Environmental	Physical
Acute Toxicity: Oral, Dermal-Not detected	Aquatic Toxicity：Not Classify： Hazardous to the ozone Layer：Not known	Flammable Gases：Category 1 Gases under Pressure：Liquefied Gas
Skin Corrosion: Not known		
Eye Corrosion: Not known Skin Sensitization: Not known		
Mutagenicity: Not known		
Carcinogenicity: Not known		
Reproductive Toxicity: Not known		
Target Organ Toxicity: Not known		

GHS label:
Symbols:

Signal Words: Danger

Hazard Statements:

H220 Extremely flammable Gas

H280 Contents gas under pressure，may explode if heated.

Precautionary Statements:

P210 Keep away from heat /sparks/open flames/hot surfaces--No smoking.

P377 Leaking gas fire: do not extinguish, unless leak can be stopped safety.

P381 Eliminate all ignition sources if safe to do so.

P410+P403 Protect from sunlight.Store in a well-ventilated place.

Section 3: Composition/Information on Ingredients

Component	CAS No.	Weight %
PROPYLENE	115-07-01	36-44
PROPANE	74-98-6	18-22
DIMETHYL ETHER	115-10-6	36-44

Section 4: First-aid Measures

Health hazards:

This product has a simple suffocation and anesthetic effects. The body short contact 1% propane does not cause symptoms. Concentrations below 10%,causing only mild dizziness； Exposure to high concentrations can appear anesthesia, loss of consciousness；high concentrations can cause suffocation.

Inhalation:

If breathed in, move person into fresh air. Keep breathing smooth. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Consult a physician.

Skin:

This product is liquefied gas. Contacting lots of liquefied propane may send skin frostbite. If the skin feels uncomfortable, seek immediate medical assistance.

Eye:

This products is liquefied gas, it may damage the eyes.

Ingestion:

If swallowed, seek immediate medical assistance.

Section 5: Fire-fighting Measures

Product hazard characteristics:

Extremely flammable gas.Mixed with air can produce an explosive mixture.If contact with heat or fire,it may burn explosion,After contact with other oxidants,it can occur Violent chemical reaction.Gas has greater density than air.It can spread to faraway places in the lying areas,and will catch fire while contact with fire.

Flammability Limits:

PROPYLENE Lower explosion limit 2.0%(V/V)；Upper explosion limit 11.7%(V/V)

PROPANE Lower explosion limit 2.1%(V/V):Upper explosive limit:9.5%(V/V)

DIMETHYL ETHER Lower explosion limit 3%(V/V):Upper explosive limit:17%(V/V)

Extinguishing Media:carbon monoxide,carbon dioxide
Fire fighting methods:
Cut off the gas supply,If you can't cut off the gas source,not allowed to put out the flame leak.Douse the containers,if possible,transfer the containers from the fire to the open place.
Extinguishing Media:
Water spray,foam,dry powder,carbon dioxide:Use water mist spray mass burning fire.
Protective Equipments for Fire Fighting:
Wear body fire-fighting equipment,wear self-contained breathing apparantus and protective clothing.

Section 6: Accidental Release Measures

Personnel protection:
Persons should leave quickly from the pollution area to windward,and be isolated,and access restricted.Recommended emergency personnel wear self positive pressure respirator,wear protective clothing.
Leakage treatment:
Cut off the source of leakage. Cover the drain near the leak with industrial covering layer or adsorbent, to avoid the gas into the drain causing explosion dangerous.
Environmental preventive measures:
The reasonable ventilation, accelerated dirrusion, Spray of water to cool, dilution.
Cleaning method:
Clean up promptly by sweeping or vacuum.

Section 7: Handling and Storage

Handling Procedures:
The operator should undergo professional training and observe the rules of the rules of the operation strictly.Closed operation ,full ventilation .Mechanical equipment or tools which can produce spark easily can't be used.
Storage Procedures:
Store in cool place.Keep container tightly closed in a dry and well-ventilated place.
Contents under pressure.

Section 8: Exposure Controls/Personal Protection

Engineering control:
GBZ 2.1-2007 Occupational exposure limits for hazardous agents in the workplace
Chemical hazardous agents:not listed.

America TLV-TWA:300 mg/ m^3

The production process should be closed and strengthen the ventilation. No smoking, eating and drinking ,avoid high temperature, fire in the workplace.
Respiratory Protection:
Wear self-absorption filter respirators or self-contained breathing apparatus.
Body protection: Wear anti-static clothing.

Eye Protection: Contacting with high concentrations should wear chemical safety glasses.
Hand protection: Wear the general working gloves.
Other protection:
Smoking is prohibited in the workplace. Avoid long-term repeated contact. People Work in the storage tank, limited space or the range of high concentration, under the watchful eye. Get in and out the storage tank.

Section 9: Physical and Chemical Properties

Physical Properties:	Liquefied Gas
Color:	Colorless
Odor:	Odorless(pure)
Molecular Weight:	N/A
pH:	N/A
Boiling Point:	No data
Melting/Freezing Point	No data
Flashy point:：	No data
Burning point:	No data
Combustion heat:	No data
Volatility:	Gas(under normal temperature and pressure)
Solubility in water	Slightly soluble in water
Relative Density:	No data
Explosion limit(v/v):	PROPYLENE Lower explosion limit 2.0%(V/V)；Upper explosion limit 11.7%(V/V) PROPANE Lower explosion limit 2.1%(V/V):Upper explosive limit:9.5%(V/V) DIMETHYL ETHER Lower explosion limit 3%(V/V):Upper explosive limit:17%(V/V)
Vapour pressure:	No data
Relative vapour density:	No data
Critical temperature:	No data
Critical pressure:	No data

Section 10: Stability and Reactivity

Stability: Stable at room temperature.
Conditions to avoid:Heat,high temperature,flames,moist air.
Material to Avoid：Strong oxidizing agents，halogen.
Hazardous Decomposition Products：Carbon oxide.
Hazardous Polymerization:Will not occur.

Section 11: Toxicological information

Acute Oral LD_{50} No Data

Acute dermal LD_{50} No Data

Acute inhalation LD_{50}	No Data
Eye Corrosion/irritation	No Data
Skin corrosion/irritation	No Data
Potential health effects	No Data
Carcinogenicity	No Data
Target Organ Effects	No Data

Section 12: Ecological Information

Biodegradability:	No Data
BOD5 and COD:	No Data
Aquatic Toxicity:	No Data
Bio-accumulative Potential:	No Data

Section13: Disposal Consideration

Product: Hand the residual and non recyclable products to processing companies. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging: Contact a licensed professional waste disposal service to dispose of this material.

Section 14: Transport Information

Maritime transport IMDG (2012 edition):

IMDG Class: 2.1

UN Number: 3161

Packaging group:-

Marine pollutant: No

Proper shipping name: LIQUEFIED GAS, FLAMMABLE

Air transport ICAO-TI and IATA-DGR (55^{TH} edition):

ICAO/IATA Class: 2.1

UN/ID Number: 3161

Packaging group:-

Proper shipping name: LIQUEFIED GAS, FLAMMABLE

Section 15: Regulatory Information

CHINA:

Safety Regulation for Hazardous Chemicals: The substance is classed as division 2.1 hazardous chemicals according to Classification and labels of dangerous chemical(GB 13690-2009、GB12268-2012).

Section 16: Other Information

The information is to best of our knowledge and is just used for health, safety and environmental purpose. It shall not be treated as any form of warranty. Please provide a proper training to person who may use, manage of this material and those safety-handling persons.

Abbreviation':N/A=Not available or Not applicable

Edit Date: October 30, 2015

Edit Institution: T.T.international Co.,LTD

Update and Revise: the second edition

Edit Standard: Globally Harmonized System of Classification and Labeling of Chemicals (5^{th} Reviewed, GHS):Annex 4:guidance on the preparation of safety data sheets(SDS)

The period of validity of the safety data:

The safety data sheet is based on GHS.TDG, IMDG, IATA-DGR, and “dangerous chemical safety management regulations” and the national standards and other related dangerous chemicals management laws and regulations and standards .The laws and regulations and standards are regularly updated and change.

For the transport of dangerous goods in line with requirements of the new management, the product safety data sheets should be in 2016 October 30 day review and update.