

SDS #            #I-015-M-PBT-GL\_161711    Gold  
                  #I-016                                Silver

Applicable Items

Item Number	Prefix	Stock	Itm Dsc
PIL41400	PIL	41400	MARKER,XFN,2/PK,GD/SV
PIL41600	PIL	41600	MARKER,SILVER
PIL41800	PIL	41800	MARKER,PAINT,PERM,MED,SV

# SAFETY DATA SHEET

Date of Issue : November, 17, 2016  
SDS No. : #I-016  
Version : 001



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## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

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This product is a writing instrument to be recognized as Article.

### 1.1. Identification of the substance or mixture

Product name : SILVER MARKER-Medium / SILVER MARKER-EF  
Product code : SC-SILVER(A) / SC-S-EFE(A)  
Mixture name : SC-PM-S

### 1.2. Use of the mixture : Ink for writing instrument

### 1.3. Company identification e-mail address

Name of manufacture : PILOT Corporation  
/supplier  
Address : 6-21, Kyobashi 2-chome, Chuo-ku, Tokyo, 104-8304, Japan  
Telephone number : 03-3538-3700  
Working hours (from 09.00am to 05.30pm)  
Facsimile number : 03-3538-3909  
E-mail address : international@pilot.co.jp

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## 2. HAZARDS IDENTIFICATION

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### 2.1. GHS Classification of the substance or mixture

#### Physical hazards

Flammable Liquids : Category 2

#### Health hazards

Acute toxicity(Oral) : Category 5

Skin corrosion/irritation : Category 3

Eye damage/irritation : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity (single exposure) : Category 3(narcotic effects)

Aspiration hazard : Category 1

#### Environmental hazards

Hazardous to the aquatic environment, short-term (acute) : Category 1

Hazardous to the aquatic environment, long-term (chronic) : Category 1

### 2.2. GHS label elements

## Hazard pictograms



## Signal word

: Danger

## Hazard statements

H225	: Highly flammable liquid and vapour
H303	: May be harmful if swallowed
H316	: Causes mild skin irritation
H319	: Causes serious eye irritation
H361	: Suspected of damaging fertility or the unborn child
H335	: May cause respiratory irritation
H336	: May cause drowsiness or dizziness
H304	: May be fatal if swallowed and enters airways
H400	: Very toxic to aquatic life
H410	: Very toxic to aquatic life with long lasting effects

## 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 equipment.
P242	: Use non-sparking tools.
P243	: Take action to prevent static discharges.
P280	: Wear protective gloves/protective clothing/eye protection/face protection.
P261	: Avoid breathing dust/fume/gas/mist/vapours/spray.
P271	: Use only outdoors or in a well-ventilated area.
P264	: Wash hands thoroughly after handling.
P201	: Obtain special instructions before use.
P202	: Do not handle until all safety precautions have been read and understood.
P273	: Avoid release to the environment.

## Response

P301+P310	: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P303+P361+P353	: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P370+P378	: In case of fire: Use water spray, foam, dry, chemical powder or carbon dioxide to extinguish.
P304+P340	: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	: If eye irritation persists: Get medical advice/attention.

P308+P313 : If exposed or concerned: Get medical advice/attention.

P332+P313 : If skin irritation occurs: Get medical advice/attention.

P331 : Do NOT induce vomiting.

P391 : Collect spillage.

#### Storage

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

P405 : Store locked up.

#### Disposal

P501 : Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards : None

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance or mixture : Mixture

#### Ingredients and composition

Ingredients	CAS Number	Weight %
Ethyl cyclohexane	1678-91-7	40 %
Alicyclic hydrocarbon resin	Non Public	25 %
Methyl cyclohexane	108-87-2	15 %
Aluminum	7429-90-5	14 %
Distillates (petroleum), hydrotreated middle	64742-46-7	5.0 %
Mineral spirit	64742-88-7 64742-95-6	1.0 %

### 4. FIRST AID MEASURES

#### 4.1. Description of first aid measures

Inhalation : Remove subject to ventilated fresh air. Consult physician if necessary.

Ingestion : Refer for medical attention.

Skin contact : Wash the affected area under tepid running water using a mild soap. And refer for medical attention if irritation continues.

Eye contact : Gently rinse the affected eyes with clean water for at least 15 minutes. And refer for medical attention if irritation continues.

First aid facilities : Ensure eyewash and water service are available.

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

Ink contact with skin may cause irritation, swelling or redness.

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

In case of skin or eye contamination treat as under First Aid Measures.

### 5. FIRE-FIGHTING MEASURES

#### 5.1. Suitable extinguishing media

: In case of fire, use foam, dry, chemical powder or carbon dioxide.

#### 5.2. Specific hazards arising from the substance or mixture

: CO<sub>2</sub>, CO, NO<sub>x</sub>, and SO<sub>x</sub>, is produced after combustion.

#### 5.3. Special protective equipment and precautions for fire-fighters

: None

## 6. ACCIDENTAL RELEASE MEASURES

- 6.1. Personal precautions, protective equipment and emergency procedures  
: Use proper ventilation. Use eye and skin protection.
- 6.2. Environmental precautions  
: Do not dispose of waste to the sewer.
- 6.3. Methods and material for containment and cleaning up  
: Absorb spill with material (cloth or paper), then place in a chemical waste containers.

## 7. HANDLING AND STORAGE

- 7.1. Precautions for safe handling  
: Use proper ventilation. Avoid rough handling or dropping.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Keep out of reach of children and do not drink ink.
- 7.2. Conditions for safe storage, including any incompatibilities  
: Store in a dry, cool, well-ventilated location, away from possible all source of ignition.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### Occupational exposure limits

Component	Standard control concentration	Threshold limit values	
		Japan Society for Occupational Health	ACGIH
Ethyl cyclohexane	None	None	None
Methyl cyclohexane	None	400ppm	TLV-TWA 400ppm
Alicyclic hydrocarbon resin	None	None	None
Mineral spirit	None	None	None

### 8.2. Appropriate engineering controls

: In the case of the handling of the room to install a closed reduction or local exhaust sources.  
Electrical equipment to be used in handling the location could be explosion-proof structure, equipment is static electricity measures.

### 8.3. Individual protection measures, such as personal protective equipment.

: Wear protective gloves/protective clothing/eye protection/face protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

- (a) Appearance : Liquid  
[Color] Silver
- (b) Odor : Organic solvent odor
- (c) Odor threshold : No data
- (d) pH : Not applicable
- (e) Melting point/freezing point : -126.9 degrees Celsius (Methyl cyclohexane)
- (f) Initial boiling point/boiling range : 100.9 degrees Celsius (Methyl cyclohexane)
- (g) Flash point : -3.9 degrees Celsius (Methyl cyclohexane)

(h) Evaporation rate	: No data
(i) Flammability (solid, gas)	: Flammable
(j) Upper/lower flammability or explosive limits	: LEL 1.1 vol%, UEL 6.7 vol% (Methyl cyclohexane)
(k) Vapor pressure	: 6200 Pa (at 25 degrees Celsius, Methyl cyclohexane)
(l) Vapor density	: 3.4 (Methyl cyclohexane)
(m) Relative density	: 0.93 (at 20 degrees Celsius)
(n) Solubility	: Insoluble in water
(o) Partition coefficient: n-octanol/water	: log Pow=4.13 (Methyl cyclohexane)
(p) Auto-ignition temperature	: No data
(q) Decomposition temperature	: No data
(r) Viscosity	: 11 mPa·s (at 20 degrees Celsius)
9.2. Other information	: None

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## 10. STABILITY AND REACTIVITY

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10.1. Reactivity	: This material is stable.
10.2. Chemical stability	: This material is stable.
10.3. Possibility of hazardous reactions	: This material is stable.
10.4. Conditions to avoid	: Direct sunshine, the high temperature and source of ignition.
10.5. Incompatible materials	: Strong oxidizing agents and reducing agents.
10.6. Hazardous decomposition products	: Heating can release vapors which can be ignited. : Burning produces obnoxious and toxic fumes, carbon oxides.

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## 11. TOXICOLOGICAL INFORMATION

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There is no data available on the mixture itself.

### 11.1. Information on toxicological effects

Acute toxicity(Oral)	: Methyl cyclohexane	: Category 4
Skin corrosion/irritation	: Methyl cyclohexane	: Category 3
	: Alicyclic hydrocarbon resin	: Category 3
Eye damage/irritation	: Mineral spirit	: Category 2
	: Methyl cyclohexane	: Category 2
Reproductive toxicity	: Ethyl cyclohexane	: Category 2
	: Methyl cyclohexane	: Category 2
Specific target organ toxicity (Single exposure)	: Methyl cyclohexane	: Category 3 (narcotic effects)
	: Ethyl cyclohexane	: Category 3 (narcotic effects)

	cyclohexane	
	: Mineral spirit	: Category 3 (narcotic effects)
Aspiration hazard	: Methyl cyclohexane	: Category 1
	: Ethyl cyclohexane	: Category 1
	: Mineral spirit	: Category 1

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## 12. ECOLOGICAL INFORMATION

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There is no data available on the mixture itself.

### 12.1. Ecotoxicity

12.1.1. Hazardous to the aquatic environment, short-term (acute)	: Methyl cyclohexane	: Category 2
	: Ethyl cyclohexane	: Category 1
12.1.2. Hazardous to the aquatic environment, long-term (chronic)	: Methyl cyclohexane	: Category 2
	: Ethyl cyclohexane	: Category 1
12.2. Persistence and degradability	: No data available	
12.3. Bioaccumulative potential	: No data available	
12.4. Mobility in soil	: No data available	
12.5. Other adverse effects	: None	

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## 13. DISPOSAL CONSIDERATIONS

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### 13.1. Waste treatment methods

- Follow all regulations in your country.

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## 14. TRANSPORT INFORMATION

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14.1. UN number	: 1993
14.2. UN proper shipping name	: Flammable liquids, N.O.S.(Methyl cyclohexane)
14.3. Transport hazard class(es)	: 3
14.4. Packing group	: II
14.5. Environmental hazards	: Not applicable
14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	: Not applicable
14.7. Special precautions for user	: Not applicable

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## 15. REGULATORY INFORMATION

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

- Follow all regulations in your country.

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## 16. OTHER INFORMATION

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International GHS conformity.

The information here is given in good faith, but no warranty, express or implied, is made.

Final determination of suitability of any material is the sole responsibility of the user.

End of SDS

# SAFETY DATA SHEET

Date of Issue : November,17,2016  
 SDS No. : #I-015  
 Version : 001



## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

This product is a writing instrument to be recognized as Article.

### 1.1. Identification of the substance or mixture

Product name : GOLD MARKER-Medium  
 Product code : SC-GOLD(A)  
 Mixture name : M-PBT-GL

### 1.2. Use of the mixture : Ink for writing instrument

### 1.3. Company identification e-mail address

Name of manufacture : PILOT Corporation  
 /supplier  
 Address : 6-21, Kyobashi 2-chome, Chuo-ku, Tokyo, 104-8304, Japan  
 Telephone number : 03-3538-3909  
 Working hours (from 09.00am to 05.30pm)  
 Facsimile number : 052-732-4938  
 E-mail address : international@pilot.co.jp

## 2. HAZARDS IDENTIFICATION

### 2.1. GHS Classification of the substance or mixture

#### Physical hazards

Flammable Liquids : Category 2

#### Health hazards

Acute toxicity(Oral) : Category 4

Skin corrosion/irritation : Category 3

Eye damage/irritation : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity (single exposure) : Category 3 (respiratory irritation / narcotic effects)

Specific target organ toxicity (repeated exposure) : Category 1 (liber)

Aspiration hazard : Category 1

#### Environmental hazards

Hazardous to the aquatic environment, short-term (acute) : Category 2

Hazardous to the aquatic environment, long-term (chronic) : Category 2



## 2.2. GHS label elements

## Hazard pictograms



## Signal word

: Danger

## Hazard statements

- H225 : Highly flammable liquid and vapor  
 H302 : Harmful if swallowed  
 H316 : Causes mild skin irritation  
 H319 : Causes serious eye irritation  
 H361 : Suspected of damage fertility or unborn child  
 H335 : May cause respiratory irritation  
 H336 : May cause drowsiness or dizziness  
 H372 : Causes damage to organs (liver) through prolonged or repeated exposure.  
 H304 : May be fatal if swallowed and enters airways  
 H401 : Toxic to aquatic life  
 H411 : Toxic to aquatic life with long lasting effects

## 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 equipment.  
 P242 : Use non-sparking tools.  
 P243 : Take action to prevent static discharges.  
 P280 : Wear protective gloves/protective clothing/eye protection/face protection.  
 P260 : Do not breathe dust/fume/gas/mist/vapors/spray.  
 P271 : Use only outdoors or in a well-ventilated area.  
 P264 : Wash hands thoroughly after handling.  
 P201 : Obtain special instructions before use.  
 P202 : Do not handle until all safety precautions have been read and understood.  
 P270 : Do not eat, drink or smoke when using this product.  
 P273 : Avoid release to the environment.

## Response

- P301+P310 : IF SWALLOWED : Immediately call a POISON CENTER/doctor  
 P304+P340 : IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P308+P313 : IF exposed or concerned: Get medical advice/attention.  
 P332+P313 : If skin irritation occurs: Get medical advice/attention.  
 P337+P313 : If eye irritation persists: Get medical advice/attention.

P370+P378	: In case of fire: Use foam, dry, chemical powder or carbon dioxide to extinguish.
P303+P361+P353	: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin 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.
P330	: Rinse mouth.
P331	: Do NOT induce vomiting.
P302+P352	: IF ON SKIN: Wash with plenty of water.
P391	: Collect spillage.
<b>Storage</b>	
P403+P235+P233	: Store in a well-ventilated place. Keep cool. Keep container tightly closed.
P405	: Store locked up.
<b>Disposal</b>	
P501	: Dispose of contents/container in accordance with local/regional/national/international regulations.
2.3. Other hazards	: None

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance or mixture : Mixture

Ingredients and composition

Ingredients	CAS Number	Weight %
Methyl cyclohexane	108-87-2	37 %
Styrene polymer	9003-53-6	28 %
Copper	7440-50-8	18 %
Ethyl cyclohexane	1678-91-7	10 %

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### 4. FIRST AID MEASURES

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#### 4.1. Description of first aid measures

Inhalation	: Remove subject to ventilated fresh air. Consult physician if necessary.
Ingestion	: Refer for medical attention.
Skin contact	: Wash the affected area under tepid running water using a mild soap. And refer for medical attention if irritation continues.
Eye contact	: Gently rinse the affected eyes with clean water for at least 15 minutes. And refer for medical attention if irritation continues.
First aid facilities	: Ensure eyewash and water service are available.

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

Ink contact with skin may cause irritation, swelling or redness.

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

In case of skin or eye contamination treat as under First Aid Measures.

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### 5. FIRE-FIGHTING MEASURES

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#### 5.1. Suitable extinguishing media

: In case of fire, use foam, dry, chemical powder or carbon dioxide.

5.2. Specific hazards arising from the substance or mixture

: CO<sub>2</sub>, CO, NO<sub>x</sub>, and SO<sub>x</sub>, is produced after combustion.

5.3. Special protective equipment and precautions for fire-fighters

: None

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## 6. ACCIDENTAL RELEASE MEASURES

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6.1. Personal precautions, protective equipment and emergency procedures

: Use proper ventilation. Use eye and skin protection.

6.2. Environmental precautions

: Do not dispose of waste to the sewer.

6.3. Methods and material for containment and cleaning up

: Absorb spill with material (cloth or paper), then place in a chemical waste containers.

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## 7. HANDLING AND STORAGE

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7.1. Precautions for safe handling

: Use proper ventilation. Avoid rough handling or dropping.

Wear protective gloves/protective clothing/eye protection/face protection.

Keep out of reach of children and do not drink ink.

7.2. Conditions for safe storage, including any incompatibilities

: Store in a dry, cool, well-ventilated location, away from possible all source of ignition.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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8.1. Control parameters

Occupational exposure limits

Component	Standard control concentration	Threshold limit values	
		Japan Society for Occupational Health	ACGIH
Methyl cyclohexane	None	400ppm	TLV-TWA 400ppm
Styrene polymer	None	2mg/m <sup>3</sup>	-
Copper	None	-	TLV 1mg/m <sup>3</sup> (Powder)
Ethyl cyclohexane	None	None	None

8.2. Appropriate engineering controls

: In the case of the handling of the room to install a closed reduction or local exhaust sources.

Electrical equipment to be used in handling the location could be explosion-proof structure, equipment is static electricity measures.

8.3. Individual protection measures, such as personal protective equipment.

: Wear protective gloves/protective clothing/eye protection/face protection.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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9.1. Information on basic physical and chemical properties

- (a) Appearance : Liquid  
[Color] Gold
- (b) Odor : Organic solvent odor
- (c) Odor threshold : No data
- (d) pH : Not applicable

(e) Melting point/freezing point	: -126.9 degrees Celsius (Methyl cyclohexane)
(f) Initial boiling point/boiling range	: 100.9 degrees Celsius (Methyl cyclohexane)
(g) Flash point	: -3.9 degrees Celsius (Methyl cyclohexane)
(h) Evaporation rate	: No data
(i) Flammability (solid, gas)	: Flammable
(j) Upper/lower flammability or explosive limits	: LEL 1.1 vol%, UEL 6.7 vol% (Methyl cyclohexane)
(k) Vapor pressure	: 6200 Pa (at 25 degrees Celsius, (Methyl cyclohexane )
(l) Vapor density	: 3.4 (Methyl cyclohexane)
(m) Relative density	: 1.10 (at 20 degrees Celsius)
(n) Solubility	: Insoluble in water
(o) Partition coefficient: n-octanol/water	: log Pow=4.13 (Methyl cyclohexane)
(p) Auto-ignition temperature	: No data
(q) Decomposition temperature	: No data
(r) Viscosity	: 14 mPa·s (at 20 degrees Celsius)
9.2. Other information	: None

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## 10. STABILITY AND REACTIVITY

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10.1. Reactivity	: This material is stable.
10.2. Chemical stability	: This material is stable.
10.3. Possibility of hazardous reactions	: This material is stable.
10.4. Conditions to avoid	: Direct sunshine, the high temperature and source of ignition.
10.5. Incompatible materials	: Strong oxidizing agents and reducing agents.
10.6. Hazardous decomposition products	: Heating can release vapors which can be ignited. : Burning produces obnoxious and toxic fumes, carbon oxides.

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## 11. TOXICOLOGICAL INFORMATION

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There is no data available on the mixture itself.

### 11.1. Information on toxicological effects

Acute toxicity(Oral)	: Methyl cyclohexane	: Category 4
	: Styrene polymer	: Category 5
Skin corrosion/irritation	: Methyl cyclohexane	: Category 3
Eye damage/irritation	: Methyl cyclohexane	: Category 2
	: Ethyl cyclohexane	: Category 2
Reproductive toxicity	: Methyl cyclohexane	: Category 2
Specific target organ toxicity (Single exposure)	: Methyl cyclohexane	: Category 3(narcotic effects)

	:Ethyl cyclohexane	: Category 3 (narcotic effects)
Specific target organ toxicity (Repeated exposure)	: Copper	: Category 3(respiratory irritation)
	: Copper	: Category 1(liber)
Aspiration hazard	: Methyl cyclohexane	: Category 1
	: Ethyl cyclohexane	: Category 1

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## 12. ECOLOGICAL INFORMATION

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There is no data available on the mixture itself.

### 12.1. Ecotoxicity

12.1.1. Hazardous to the aquatic environment, short-term (acute)	: Methyl cyclohexane : Ethyl cyclohexane	: Category 2 : Category 1
12.1.2. Hazardous to the aquatic environment, long-term (chronic)	: Methyl cyclohexane : Ethyl cyclohexane	: Category 2 : Category 1
12.2. Persistence and degradability	: No data available	
12.3. Bioaccumulative potential	: No data available	
12.4. Mobility in soil	: No data available	
12.5. Other adverse effects	: None	

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## 13. DISPOSAL CONSIDERATIONS

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### 13.1. Waste treatment methods

- Follow all regulations in your country.

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## 14. TRANSPORT INFORMATION

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14.1. UN number	: 1993
14.2. UN proper shipping name	: Flammable liquids, N.O.S.(Methyl cyclohexane)
14.3. Transport hazard class(es)	: 3
14.4. Packing group	: II
14.5. Environmental hazards	: Not applicable
14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	: Not applicable
14.7. Special precautions for user	: Not applicable

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## 15. REGULATORY INFORMATION

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

- Follow all regulations in your country.

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## 16. OTHER INFORMATION

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International GHS conformity.

The information here is given in good faith, but no warranty, express or implied, is made.

Final determination of suitability of any material is the sole responsibility of the user.

End of SDS