# Material Safety Data Sheet

**ETHYL CHLOROFORMATE FOR SYNTHESIS** (RXSOL-60-6604-565)

## 1. Product and Company Identifaction

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|---|---|
| Product Name | RXSOL-60-6604-565 |
| Product Type | ETHYL CHLOROFORMATE FOR SYNTHESIS |
| Revised date | |

Company Details:

RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

Stock Point : Mumbai, Kandla, Chennai, Visakhapatnam, Kolkata, Fujairah, Muscat Barka

| | |
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## 2. Composition / informationon ingredients

Substance / Preparation : Ethyl chloroformate
CAS No :541-41-3
Substance.

| Substance name | Contents | CAS No |
|---|---|---|
| Ethyl chloroformate : | 100 % | 541-41-3 |

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

## 3. Hazards Identification

3.1. Classification of the substance or mixture
Classification EC 67/548 or EC 1999/45
Classification : F; R11
T+; R26
Xn; R22
C; R34
Hazard Class and Category Code(s), Regulation (EC) No 1272/2008 (CLP)
Health hazards : Skin corrosion - Category 1B - Danger (CLP : Skin Corr. 1B) H314
Serious eye damage - Category 1 - Danger (CLP : Eye Dam. 1) H318
Acute toxicity, Inhalation - Category 2 - Danger (CLP : Acute Tox. 2) H330
Acute toxicity, Oral - Category 4 - Warning (CLP : Acute Tox. 4) H302
Physical hazards : Flammable liquids - Category 2 - Danger (CLP : Flam. Liq. 2) H225
3.2. Label elements
Labelling EC 67/548 or EC 1999/45
Symbol(s) : T+ : Very toxic
F : Highly flammable
R Phrase(s) : R11 : Highly flammable.
R22 : Harmful if swallowed.
R26 : Very toxic by inhalation.
R34 : Causes burns.
S Phrase(s) : S1/2 : Keep locked up and out of reach of children.
S9 : Keep container in a well-ventilated place.
S16 : Keep away from sources of ignition - No smoking.
S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 : After contact with skin, wash immediately with
S33 : Take precautionary measures against static discharges.
S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.
S45 : In case of accident or if you feel unwell, seek medical advice immediately ( show the label when possible).

Labelling Regulation EC 1272/2008 (CLP)
Hazard pictograms

Signal words : Danger
Hazard statements : H225 : Highly flammable liquid and vapour.
H330 : Fatal if inhaled.
H314 : Causes severe skin burns and eye damage.
H302 : Harmful if swallowed.
Precautionary statements
• General : P102: Keep out of reach of children.
P103: Read label before use.
P101: If medical advice is needed, have product container or label at hand.
• Prevention : P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical, ventilating, lighting, …, equipment.
P210: Keep away from heat, sparks, open flames or hot surfaces. – No smoking.
P284: Wear respiratory protection.
P280: Wear protective gloves, protective clothing, eye protection, face protection.
P271: Use only outdoors or in a well-ventilated area.
P260: Do not breathe dust, fume, gas, mist, vapours, spray.
P233: Keep container tightly closed.
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
• Response : P301+P330+P331: IF SWALLOWED : Rinse mouth. Do NOT induce vomiting.
P305+P351+P338: IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340: IF INHALED : Remove to fresh air and keep at rest in a position comfortable for breathing.
P303+P361+P353: IF ON SKIN (or hair) : Remove immediately all contaminated clothing. Rinse skin with water/shower.
P363: Wash contaminated clothing before reuse.
P370+P378: In case of fire: Use for extinction.
• Storage : P403+P233: Store in well-ventilated place. Keep container tightly closed.
P403+P235: Store in well-ventilated place. Keep cool.
P405: Store locked up.
• Disposal considerations : P501: Dispose of this material and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
3.3. Other hazards
Other hazards : The substance does not fulfil the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.
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## 4. First Aid Measures

4.1. Description of first aid measures
Inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor. Specific treatment is urgent (see on this label).
Skin contact : Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Immediately call a POISON CENTER or doctor.
Eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. Specific treatment (see on this label).
Ingestion : Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. Specific treatment (see on this label).
4.2. Most important symptoms and effects, both acute and delayed
Symptoms relating to use : Fatal if inhaled.
Causes severe skin burns and eye damage. Causes serious eye damage. Swallowing a small quantity of this material will result in serious health hazard. Corrosive to respiratory tract.
4.3. Indication of any immediate medical attention and special treatment needed
General information : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

## 5. Fire-fighting Measures

5.1. Extinguishing media
Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

Surrounding fires : Use water spray or fog for cooling exposed containers
. 5.2. Special hazards arising from the substance or mixture
Flammable class : Highly flammable liquid and vapour.
Hazardous combustion products : Under fire conditions, hazardous fumes will be present. Thermal decomposition generates : Corrosive vapours.
5.3. Advice for fire-fighters
Protection against fire : Do not enter fire area without proper protective equipment, including respiratory protection.
Special procedures : Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

## 6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
For emergency responders : Equip cleanup crew with proper protection.
Ventilate area.
Technical measures : Use special care to avoid static electric charges.
Special precautions : Remove ignition sources. No naked lights. No smoking.
For non-emergency personnel : Evacuate unnecessary personnel.
6.2. Environmental precautions
Environmental precautions : Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.
6.3. Methods and material for containment and cleaning up
Clean up methods : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
6.4. Reference to other sections
See section 8. Exposure controls/personal protection

## 7. Handling and Storage

7.1. Precautions for safe handling
Handling : Handle empty containers with care because residual vapours are flammable. Do not eat, drink or smoke when using this product. Do not breathe dust, fume, gas, mist, vapours, spray. Wash thoroughly after handling. Wash contaminated clothing before reuse. Use only outdoors or in a well-ventilated area.
Technical protective measures : Provide good ventilation in process area to prevent formation of vapour. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical, ventilating, lighting, …, equipment.
Special precautions : No naked lights. No smoking.
7.2. Conditions for safe storage, including any incompatibilities
Storage : Keep only in the original container in a cool, well ventilated place. Keep in fireproof place. Do not store in corrodable metal. Ground/bond container and receiving equipment. Keep container tightly closed.
Storage regulation : Comply with applicable regulations.
Storage - away from : Strong bases. Strong acids. Sources of ignition. Direct sunlight. Heat sources.
7.3. Specific end use(s)
Specific end use(s) : None.

## 8. Exposure controls and personal protection

8.1. Exposure controls
Personal protection : Avoid all unnecessary exposure.
• Respiratory protection : Wear respiratory protection.
• Hand protection : Wear protective gloves.
• Skin protection : Wear suitable protective clothing.
• Eye protection : Chemical goggles or face shield.
• Others : When using, do not eat, drink or smoke.
8.2. Control parameters
Occupational Exposure Limits : No data available.

## 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state at 20 °C : Liquid.
Odour threshold : No data available.
pH value : No data available.
Melting point [°C] : -81 °C

Decomposition point [°C] : N/A
Critical temperature [°C] : N/A
Auto-ignition temperature [°C] : N/A
Flammability (solid, gas) : N/A
Highly flammable liquid and vapour.
Flash point [°C] : 10 °C
Boiling point [°C] : 93 °C
Initial boiling point [°C] : N/A
Final boiling point [°C] : N/A
Evaporation rate : N/A
Vapour pressure [20°C] : 54 hPa at 20 °C
Vapour pressure mm/Hg : N/A
Vapour density : 3,75
Density [g/cm3] : 1,135
Relative density, gas (air=1) : N/A
Relative density, liquid (water=1) : N/A
Solubility in water [% weight] : Insoluble
Solubility in water : N/A
Log Pow octanol / water at 20°C : No data available.
Solubility : 7
Viscosity at 40°C [mm2/s] : N/A
9.2. Other information
Explosive properties : N/A
Explosion limits - upper [%] : 12,60%
Explosion limits - lower [%] : 3,70%
Oxidising properties : No data available.

## 10. Stability and reactivity

10.1. Reactivity
Reactivity : Not established.
10.2. Chemical stability
Chemical stability : Stable under recommended storage conditions.
10.3. Possibility of hazardous reactions
Hazardous reactions : Not established.
10.4. Conditions to avoid
Conditions to avoid : Direct sunlight. Extremely high or low temperatures. Open flame.
10.5. Incompatible materials
Materials to avoid : Strong acids. Strong bases.
10.6. Hazardous decomposition products
Hazardous decomposition products : Fumes. Carbon monoxide. Carbon dioxide.
May release flammable gases. Thermal decomposition generates : Corrosive vapours.

## 11. Toxicological information

11.1. Information on toxicological effects
Acute toxicity
• Inhalation : Fatal if inhaled.
• Dermal : Based on available data, the classification criteria are not met.
• Ingestion : Harmful if swallowed.
Corrosion : Causes severe skin burns and eye damage. Causes serious eye damage.
Corrosive to respiratory tract.
Irritation : Based on available data, the classification criteria are not met.
Sensitization : Based on available data, the classification criteria are not met.
Mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : Based on available data, the classification criteria are not met.
Toxic for reproduction : Based on available data, the classification criteria are not met.
STOT-single exposure : Based on available data, the classification criteria are not met.
STOT-repeated exposure : Based on available data, the classification criteria are not met.
Aspiration hazard : Based on available data, the classification criteria are not met.

## 12. Ecological information

12.1. Toxicity
Toxicity information : Not established.
12.2. Persistence - degradability
Persistence - degradability : Biodegradable.
12.3. Bioaccumulative potential
Bioaccumulative potential : Not established.

12.4. Mobility in soil
Mobility in soil : Not established.
12.5. Results of PBT and vPvB assessment
Results of PBT and vPvB assessment : The substance does not fulfil the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.
12.6. Other adverse effects
Environmental precautions : Avoid release to the environment.

## 13. Disposal considerations

13.1. Waste treatment methods
General : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations. Dispose of this material and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Special precautions : Hazardous waste due to toxicity.
Handle empty containers with care because residual vapours are flammable.

## 14. Transport information

14.1. Land transport (ADR-RID)
Proper shipping name : ETHYL CHLOROFORMATE
UN N° : 1182
H.I. nr : 663
ADR - Class : 6.1
Labelling - Transport : 6.1 : Toxic substances. 3 : Flammable liquid. 8 : Corrosive substance.
ADR - Classification code : TFC
ADR - Group : I
ADR - Packing instructions : P602
ADR - Limited Quantity : 0
ADR - Tunnel code : C/D : Tank carriage: Passage forbidden through tunnels category C, D and E. Other carriage: Passage forbidden through tunnels of category D and E.
14.2. Sea transport (IMDG) [English only]
Proper shipping name : ETHYL CHLOROFORMATE
UN N° : 1182
IMO-IMDG - Class or division : 6.1 : Toxic substances. ( 3 : Flammable liquid. ) ( 8 : Corrosive substance. )
IMO-IMDG - Packing group : I
IMO-IMDG - Marine pollution : No
14.3. Air transport (ICAO-IATA) [English only]
Proper shipping name : ETHYL CHLOROFORMATE
UN N° : 1182
IATA - Class or division : 6.1 : Toxic substances. ( 3 : Flammable liquid. ) ( 8 : Corrosive substance. )
IATA - Packing group : I
IATA - Passenger and Cargo Aircraft : NOT ALLOWED
IATA - Cargo only : NOT ALLOWED
ERG-Nr : 6CF

## 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Safety, health and environmental : Ensure all national/local regulations are observed.
regulations/legislation specific for the substance or mixture
REACH Restrictions - Annex XVII : The components of this product are not subject to restrictions.
REACH Authorisation - Annex XIV : The components of this product are not subject to authorization.
15.2. Chemical Safety Assessment
Chemical Safety Assessment : It has not been carried out.

## 16. Other information

Abbreviations and acronyms : PBT: persistent, bioaccumulative and toxic.
vPvB: very persistent and very bioaccumulative

Sources of key data used : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
Further information : None.
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