

# Safety Data Sheet

According to Hazard Communication Standard (29 CFR 1910.1200)

## Tetrahydromethylphthalic anhydride 600

Issue date: 07/14/2015

Version 1.0

Revision date: 07/14/2015

### 1. Product and Company Identification

**Product name:** Tetrahydromethylphthalic anhydride 600

Synonyms: -

CAS #: The product is a mixture (See section 3)

Product code: -

Product use: Industrial use as a hardener for epoxy resins.

**Manufacturer/Supplier:**

Supplier(Manufacturer): Polynt S.p.A.

Address: Via Enrico Fermi 51  
24020 Scanzorosciate (BG)  
ITALY

Contact person(E-mail): msds@polynt.com

Telephone: +39 035 652 111

Fax: -

**Emergency telephone Number:** +39 035 652 276

### 2. Hazard(s) identification

**GHS classification:**

|                        |                                   |            |
|------------------------|-----------------------------------|------------|
| Physical hazards:      | Not classified                    |            |
| Health hazards:        | Serious eye damage/eye irritation | Category 1 |
|                        | Skin sensitization                | Category 1 |
|                        | Respiratory sensitization         | Category 1 |
| Environmental hazards: | Not classified                    |            |

**GHS label elements:**

Hazard Pictograms:



Signal word: Danger

Hazard statement: Causes serious eye damage.  
May cause an allergic skin reaction.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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### Precautionary statement:

- Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray.  
Wear protective gloves/eye protection/face protection.  
Contaminated work clothing must not be allowed out of the workplace.  
[In case of inadequate ventilation] wear respiratory protection.
- Response:** If on skin: Wash with plenty of soap and water.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center /doctor.  
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.  
If skin irritation or rash occurs: Get medical advice/attention.  
If experiencing respiratory symptoms: Call a poison center/ doctor.  
Wash contaminated clothing before reuse.
- Storage:** Not applicable.
- Disposal:** Dispose of contents/container to waste in accordance with local, regional, national and international regulations.

### 3. Composition / Information on Ingredients

| Components                             | CAS#       | Percent   | GHS Classification   |
|--|------------|-----------|--|
| tetrahydro-4-methylphthalic anhydride  | 34090-76-1 | 50% - 70% | H318 Eye Dam. 1<br>H334 Resp. Sens. 1<br>H317 Skin Sens. 1 |
| cyclohexane-1,2-dicarboxylic anhydride | 85-42-7    | 30% - 50% | H318 Eye Dam. 1<br>H334 Resp. Sens. 1<br>H317 Skin Sens. 1 |

### 4. First Aid Measures

#### First aid procedures:

- Eye contact:** In the case of contact with eyes, rinse immediately with plenty of water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center /doctor.
- Skin contact:** After contact with skin, Take off contaminated clothing and wash it before reuse. Wash immediately with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
- Inhalation:** Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a poison center /doctor.

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Ingestion: Call a physician immediately. Clean mouth with water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Notes to physician: Treat symptoms.

## 5. Fire Fighting Measure

**Flammable properties:** Not available.

### Extinguishing media:

Suitable extinguishing media: Foam, carbon dioxide (CO<sub>2</sub>), powder, water spray.

Unsuitable extinguishing media: Do not use water jets as they can disperse and spread fire.

**Firefighting equipment/instructions:** In the event of fire, wear self-contained breathing apparatus. Water mist may be used to cool closed containers. Use personal protective equipment to protect skin/eyes.

**Hazardous combustion products:** In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

## 6. Accidental Release Measures

**Personal precautions:** Move any people not authorised to contain the emergency out of the area. Avoid coming in contact with the substance or handling containers without adequate protection. Use the personal protective equipment described in section 8. Use a respirator in the event of emissions/spillage of large quantities. Eliminate all sources of ignition. Remove all incompatible materials as outlined in section 10 of SDS.

**Environmental precautions:** Contain the spillage as far as possible. Prevent spilled materials getting into the drainage system, wells, surface water or groundwater. In the case of leaks into a water course, drains, or if the product has contaminated the ground or vegetation, contact the local authorities.

**Methods for cleaning up:** Do not use equipment that can generate sources of ignition when cleaning. If possible, vacuum up the spilled material and/or absorb parts that can't be vacuumed up with inert materials (sand, earth, absorbent materials) and place in suitable containers (separate liquids and solids) for disposal in accordance with section 13. After collection, ventilate and clean the affected area with water before granting access. Do not flush the water used for cleaning into watercourses or down drains.

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### 7. Handling and Storage

**Handling:** Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin and eyes. Take precautionary measures against static discharges. Avoid breathing vapors. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off contaminated clothing and wash it before reuse. For precautions see section 2.2.

**Storage:** Eliminate all sources of combustion. Keep container hermetically closed in a dry and well ventilated environment. Do not store near heat sources or expose to direct sunlight, to preserve the quality of the product. Keep away from incompatible materials (see point 10.5). Keep away from food, feed and beverages.

### 8. Exposure Controls / Personal Protection

**Control parameters:**

OCCUPATIONAL EXPOSURE LIMITS (OEL):

INGREDIENT DATA:

| Source                                | Ingredient                             | TWA           | STEL          | Peak                    | Notes            |
|---------------------------------------|--|---------------|---------------|-------------------------|------------------|
| US ACGIH Threshold Limit Values (TLV) | cyclohexane-1,2-dicarboxylic anhydride | Not Available | Not Available | 0.005 mg/m <sup>3</sup> | TLV® Basis: Sens |

EMERGENCY LIMITS:

| Ingredient                             | TEEL-1        | TEEL-2        | TEEL-3        |
|--|---------------|---------------|---------------|
| Tetrahydromethylphthalic anhydride 600 | Not Available | Not Available | Not Available |

| Ingredient                             | Original IDLH | Revised IDLH  |
|--|---------------|---------------|
| tetrahydro-4-methylphthalic anhydride  | Not Available | Not Available |
| cyclohexane-1,2-dicarboxylic anhydride | Not Available | Not Available |

**Exposure controls:**

Appropriate engineering controls: Use in a well-ventilated area.

**Individual protection measures, such as personal protective equipment:**

Eye / face protection: Goggles or protective visor.

Skin protection: The material the gloves are made of must be impermeable and stable when in contact with the substance. No specific information available on the suitability of the material and thickness of the gloves. Consult the glove manufacturer for specific information on the suitability of the gloves. Replace the gloves in the case of internal contamination, when punctured, or if external contamination cannot be removed. The actual duration of protection depends on the conditions of use. Wear protective clothing resistant to chemical substances.

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|                                 |  |
|---------------------------------|--|
| Respiratory protection:         | Mask with A type filter for vapors and organic gases with a boiling point > 65°C. (EN 149).  |
| General hygiene Considerations: | 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. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. |

## 9. Physical & Chemical Properties

### Appearance:

Physical state: Liquid

Form: Liquid

Color: Pale yellow

**Odor:** Characteristic

**Odor threshold:** Not available

**pH:** Not available

**Vapor pressure:** 2 mmHg at 120°C

**Melting point/Freezing point:** 19.3 °C (CAS# 34090-76-1); 31.9 °C (CAS#85-42-7);

**initial boiling point and boiling range:** 297 °C (CAS# 34090-76-1); 290.6 °C(CAS#85-42-7)

**Flash point:** Not available

**Evaporation rate:** Not available

**Flammability (solid, gas):** Not available

**Explosion limits:** Not available

**Vapor density:** Not available

**Solubility (water):** 12.5 g/l at 20°C (as acid form)

**Partition coefficient (Log Pow):** 1.88 (CAS#34090-76-1); 1.59 (CAS#85-42-7); (40°C)

**Auto-ignition temperature:** Not available

**Decomposition temperature:** Not available

**Specific gravity:** Not available

**Relative density:** 1.20 at 25 °C

**Flammability limits in air, upper, %by volume:** Not available

**Flammability limits in air, lower, % by volume:** Not available

**VOC (Volatile Organic Compounds):** Not available

**Percent volatile:** Not available

**Molecular Formula:** Not available

**Molecular Weight:** Not available

### Other data:

**Viscosity:** 60-70 mPa.s at 25°C

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#### 10. Chemical Stability & Reactivity Information

|  |   |
|--|---|
| <b>Reactivity:</b>                         | Stable under normal conditions.   |
| <b>Chemical stability:</b>                 | Material is stable under normal conditions.   |
| <b>Conditions to avoid:</b>                | Incompatible materials. Avoid the build-up of electrostatic charges.<br>Avoid exposure to heat sources. |
| <b>Incompatible materials:</b>             | Oxidizing agents, amines, alkali metals.  |
| <b>Hazardous decomposition products:</b>   | Toxic fumes of carbon dioxide / carbon monoxide.  |
| <b>Possibility of hazardous reactions:</b> | No decomposition when used as directed.   |

#### 11. Toxicological Information

##### Toxicokinetics, metabolism and distribution:

**Non-human toxicological data:** Not available

##### Information on toxicological effects:

##### Acute toxicity:

##### tetrahydro-4-methylphthalic anhydride (CAS# 34090-76-1):

|                        |                 |
|------------------------|-----------------|
| LD50(Oral, Rat):       | > 2000 mg/kg bw |
| LD50(Dermal, Rat):     | > 2000 mg/kg bw |
| LC50(Inhalation, Rat): | Not available   |

##### cyclohexane-1,2-dicarboxylic anhydride (CAS#85-42-7):

|                              |   |
|------------------------------|---|
| LD50(Oral, Rat):             | 4040 mg/kg bw   |
| LD50(Dermal, Rabbit):        | > 2000 mg/kg bw   |
| LC50 (4h) (Inhalation, Rat): | > 1.1 mg/L air (aerosol) (highest achievable concentration) |

**Skin corrosion/Irritation:** Not classified

**Serious eye damage/irritation:** Causes serious eye damage.

##### Respiratory or skin sensitization:

Respiratory sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization: May cause an allergic skin reaction.

**Germ cell mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive toxicity:** Not classified

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**STOT- single exposure:** Not classified

**STOT-repeated exposure:** Not classified

**Aspiration hazard:** Not classified

## 12. Ecological Information

### Toxicity:

tetrahydro-4-methylphthalic anhydride (CAS# 34090-76-1):

| Acute toxicity |            | Time | Species | Method   | Evaluation | Remarks |
|----------------|------------|------|---------|----------|------------|---------|
| LC50           | > 100 mg/L | 48h  | Fish    | OECD 203 | N/A        | N/A     |
| EC50           | 130 mg/L   | 48h  | Daphnia | OECD 202 | N/A        | N/A     |
| EC50           | 75 mg/L    | 72h  | Algae   | OECD 201 | N/A        | N/A     |

cyclohexane-1,2-dicarboxylic anhydride (CAS#85-42-7):

| Acute toxicity |             | Time | Species | Method   | Evaluation | Remarks |
|----------------|-------------|------|---------|----------|------------|---------|
| LC50           | > 1000 mg/L | 48h  | Fish    | OECD 203 | N/A        | N/A     |
| EC50           | > 100 mg/L  | 48h  | Daphnia | OECD 202 | N/A        | N/A     |
| EC50           | 90.5 mg/L   | 72h  | Algae   | OECD 201 | N/A        | N/A     |

### Persistence and degradability:

tetrahydro-4-methylphthalic anhydride (CAS# 34090-76-1):

Abiotic degradation:

Hydrolysis: Half-life (DT50): 3.2 min at 20°C Rate constant:

Phototransformation in air: Half-life(DT50): 19 h (Estimate);

Biotic degradation: Not Readily biodegradable.

This substance is hydrolysed rapidly in a few minutes; therefore exposure of the aquatic and terrestrial compartments for this substance are unlikely.

cyclohexane-1,2-dicarboxylic anhydride (CAS# 85-42-7):

Abiotic degradation:

Hydrolysis: Half-life (DT50): 5 min at 25°C Rate constant;

Phototransformation in air: Half-life(DT50): 56.5 h (Estimate);

Biotic degradation: Readily biodegradable.

### Bioaccumulative potential:

tetrahydro-4-methylphthalic anhydride (CAS# 34090-76-1):

BCF = 20.9 L/kg or dimensionless.

Partition coefficient: log Pow= 1.88 (40°C) (as anhydride form)

Partition coefficient: log Pow= 0.11 (40°C) (as acid form)

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cyclohexane-1,2-dicarboxylic anhydride (CAS#85-42-7):

BCF = 5.201 L/kg or dimensionless.

Partition coefficient: log Pow= 1.59 (40°C) (as anhydride form)

Partition coefficient: log Pow= - 0.31 (25°C) (as acid form)

### Mobility in soil:

tetrahydro-4-methylphthalic anhydride (CAS# 34090-76-1):

The potential for adsorption can be expected to be low (the substance has a low octanol water partition coefficient of 1.88 and the substance is not hydrolytically stable).

cyclohexane-1,2-dicarboxylic anhydride (CAS#85-42-7):

logKoc: ca. 2.3 at 20°C; Koc 190 at 20°C.

### Results of PBT / vPvB assessment:

tetrahydro-4-methylphthalic anhydride (CAS# 34090-76-1):

Based on available information, the substance is not a PBT/vPvB.

cyclohexane-1,2-dicarboxylic anhydride (CAS#85-42-7):

Based on available information, the substance is not a PBT/vPvB.

### Other adverse effects:

No known significant effects or critical hazards.

## 13. Disposal Considerations

### Disposal instructions:

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

### Contaminated packaging:

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport Information

### DOT

#### Basic shipping requirements:

UN number: Not regulated

Proper shipping name: Not regulated

Hazard class: Not regulated

Packing group: Not regulated

Environmental hazards: No

### IATA/ICAO

UN number: Not regulated

UN proper shipping name: Not regulated

Transport hazard class(es): Not regulated

Packing group: Not regulated

Environmental hazards: No



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### IMDG

|                                    |               |
|------------------------------------|---------------|
| <b>UN number:</b>                  | Not regulated |
| <b>UN proper shipping name:</b>    | Not regulated |
| <b>Transport hazard class(es):</b> | Not regulated |
| <b>Packing group:</b>              | Not regulated |
| <b>Environmental hazards:</b>      | No            |

## 15. Regulatory Information

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

|  |  |
|--|--|
| <u>tetrahydro-4-methylphthalic anhydride (34090-76-1):</u><br>is found on the following regulatory lists | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory  |
| <u>cyclohexane-1,2-dicarboxylic anhydride (85-42-7):</u><br>is found on the following regulatory lists   | US ACGIH Threshold Limit Values (TLV)<br>US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |

## 16. Other Information

**HMIS® ratings:** Health: 3  
Flammability: 1  
Physical hazard: 0

**NFPA ratings:** Health: 3  
Flammability: 1  
Instability: 0

### Acronyms:

|        |  |
|--------|--|
| ACGIH: | American Conference of Governmental Industrial Hygienist.  |
| B:     | Bioaccumulable.  |
| BCF:   | Bioconcentration Factor.   |
| DOT:   | U.S. Department of Transportation.   |
| EC50:  | Effective Concentration 50 (that produces an effect (other than death) for 50% of organisms test). |
| EPA:   | Environmental Protection Agency.   |
| GHS:   | Globally Harmonized System of Classification and Labeling of Chemicals.                            |
| IATA:  | International Air Transport Association.   |
| IBC:   | International code for the construction and equipment of ships carrying dangerous Bulk Chemicals.  |
| ICAO:  | International Civil Air-transport Organisation.  |
| IDLH:  | Immediately Dangerous to Life and Health.  |



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|                   |  |
|-------------------|--|
| IMDG:             | International Maritime Dangerous Goods code.   |
| Koc:              | Organic carbon/water partition coefficient (adsorption coefficient).                                     |
| Kow/Pow:          | n-octanol/water partition coefficient.   |
| LC50:             | Lethal Concentration for 50% of animal test.   |
| LD50:             | Lethal Dose for 50% test animal.   |
| P:                | Persistent.  |
| PBT:              | Persistent, Bioaccumulable and Toxic.  |
| SDS:              | Safety Data Sheet.   |
| STOT:             | Specific target organ toxicity.  |
| TEELs;            | Temporary Emergency Exposure Limits.   |
| TLV:              | Threshold Limit Value.   |
| TLV-C:            | Threshold Limit Value - Ceiling.   |
| TLV-STEL:         | Threshold Limit Value - Short Term Exposure Limit.   |
| TLV-TWA:          | Threshold Limit Value - Time Weighted Average.   |
| vPvB:             | very Persistent and very Bioaccumulable.   |
| <b>Disclaimer</b> | The information in the sheet was written based on the best knowledge and experience currently available. |
| <b>Issue date</b> | 07-14-2015   |