

TORAY INDUSTRIES, INC. SAFETY DATA SHEET

MSDS No. : TPM/PBT003/EN/01
Issue No. : 3.0
Issued : 2006-02-13
Revised : 2014-09-23

Product: TORAYCON 1200M NATURAL PBT RESIN

1. Chemical Product and Company Identification

1.1 Product name

TORAYCON 1200M PBT RESIN

1.2 Recommended use of the chemical and restrictions on use

Recommended Use : For automobiles, electric and electronic device, general use.
Restriction on Use : Do not use for self-contained mechanical device.

For use of the product for medical purposes or food containers purposes, please kindly contact us in advance on the specific usage.

1.3 Supplier's details

Name of Supplier : Toray Plastics (Malaysia) Sdn. Bhd.
Address : 2628 MK.1, SPT., Lorong Perusahaan 4, Prai Free Industrial Zone,
13600 Prai, Penang, Malaysia.
Telephone No. : +60-4-3988-088
Fax No. : +60-4-3908-975, +60-4-3977-264
E-mail Address/URL : <http://www.torayplastics.com.my>

Sales

Department : Sales & Marketing Department
Manager : General Manager

Technical

Department : Technology Centre
Manager : Technology Centre Manager

1.4 Emergency phone number

+60-4-3988-088

2. Hazards Identification

2.1 GHS classification

This product is not classified under hazardous according to JIS Z 7252: 2009.
(Labeling of chemicals based on GHS).

2.2 GHS Label Elements

Not applicable.

2.3 Other hazards which are not covered by GHS

Refer to the Safety Data Sheet for this product before use.
This product may release small amount of volatile gases which may cause irritation to eyes, nose and throat.
Use adequate local exhaust ventilation during drying and molding of the product.
Get medical advice if you feel unwell.
Sweep up and dispose any spilled product to eliminate slipping hazards.
Keep away from heat source, steam pipe and direct sunlight. Store in cool place.
Follow the local law and regulations of storage.
Do not pile up the product too high to avoid any injuries caused by falling of the product.
Follow the local law and regulations concerning disposal.

2.4 Major Symptom and Envisioned Emergencies

No information available.

TORAY INDUSTRIES, INC. SAFETY DATA SHEET

MSDS No. : TPM/PBT003/EN/01
Issue No. : 3.0
Issued : 2006-02-13
Revised : 2014-09-23

Product: TORAYCON 1200M NATURAL PBT RESIN

3. Composition/Information on Ingredients

- 3.1** Substance / Mixture : Substance
3.2 Product Identity (Chemical Name, Common Name) : Polytetramethylene Terephthalate Resin
3.3 Synonym(s) : Polybutylene Terephthalate Resin, PBT Resin
3.4 Composition / Information on Ingredients

a) Information on Ingredients

Chemical Identity of the Substances : Polytetramethylene Terephthalate
Content (%) : >99.5
Chemical Formula, Structural Formula : $[\text{OC}_4\text{H}_8\text{OCO}(\text{C}_6\text{H}_4)\text{CO}]_n$ -
CAS No. : 26062-94-2
ENCS No. (Chemical Substances Control Law) : 7-1021, 7-1039
ISHL No. (Industrial Safety and Health Act) : Existing Chemical Substances
TSCA : Registered

b) Additives

Chemical Identity of the Substances : Catalysts and Additives
Content (%) : <0.5
CAS No. : Nondisclosure (Regd)
ENCS No. (Chemical Substances Control Law) : Nondisclosure (Regd)
ISHL No. (Industrial Safety and Health Act) : Nondisclosure (Regd)
Contribute to GHS Classification of the Substance/Mixture or Not : Not Contribute

4. First-Aid Measures

4.1 Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Evacuate victim that inhaled gas from the molten polymer to fresh air.
Seek medical advice, if victim does not recover.

4.2 Skin contact

If a person touches the molten polymer, cool the affected part with fresh water.
Do not try to remove the polymer by force and seek medical advice if the person got burnt.

4.3 Eye contact

Gently rinse the affected eyes with clean water for at least 15 minutes. Consult a doctor to receive medical treatment as soon as possible.
If the casualty wears contact lenses, have them removed and continue rinsing.
Avoid the casualty from rubbing eyes.

4.4 Ingestion

Rinse mouth with water. Give the person one or two glasses of water. Try to get the victim to vomit by putting a finger in the throat.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Seek medical advice, if victim feels unwell after vomit.

4.5 Protective measures for a first-aid person

Wear protective gloves when removing melting polymer or high temperature polymer.

5. Fire-fighting Measures

5.1 Extinguishing media

- (a) Suitable extinguishing media
Water spray / Water jet / Foam / Powder / Carbon dioxide (CO₂).
- (b) Unsuitable extinguishing media
Nothing in particular.

5.2 Specific hazards under fire

In case of fire and / or explosion, do not breathe in fumes.
Toxic fumes or gas formed during combustion.

5.3 Specific fire-fighting measures

Protect surrounding equipment by spraying water from a safe distance.
Remove movable containers from the area of the fire if safe to do so.
Be sure to extinguish a fire from the windward side and keep a safe distance from a fire.
Evacuate non-essential personnel to safe area.

5.4 Special protective actions for fire fighters

Fire fighters should wear proper protective equipment.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Sweep up spilled resin pellets on road or floor to avoid slipping.

6.2 Environmental Precautions

Do not discharge into sewer or drain.
If pellets got released in environment, take adequate steps to prevent aquatic animals and birds dying from eating pellets.

6.3 Methods and materials for containment and cleaning up

Sweep up, place in bag and hold for waste disposal.

6.4 Preventive measures for secondary accident

Remove possible sources of ignition in the surrounding area.

7. Handling and storage

7.1 Precaution for safe handling

- (a) Exposure control for handling personnel
Do not breathe dust / fume / dust.
Do not eat or drink when using.
Do not smoke when using.
Use only in the well-ventilated areas.
- (b) Prevention of fire & explosion
Do not carelessly use fire nearby.
Take precautionary actions of powder-dust explosion, if powder-dust occurred during secondary process.

Local/ General ventilation / total air ventilation

Use adequate local ventilation to remove fumes generated from molten resin during processing with molding machine or extruder. Use total ventilation with ventilation fans if above work are carried out in a building. Do not inhale the gas and fumes generated during molding.

Precaution / Safety treatments

Prevent deposition of dust.
Good general ventilation should be sufficient for most conditions.
Do not touch high temperature resin without protector.
Do not keep this material under high temperature condition for a long time.
Plastics pellets usually generates static-electricity, thus take countermeasures to eliminate static-electricity if necessary.

Precaution for safety handling

Do not damage containers.
Avoid contact of containers with sharp edges.
Avoid rough handling or dropping.
See information on each ingredient if powder-dust occurs.
Do not empty into drains.

Proper hygiene measures

Wash hands before intermissions or and after work.
Do not eat or smoke while working.

7.2 Conditions for safe storage, including any incompatibilities

Technical measure

No information available.

Proper storage condition

This material is flammable.
Follow fire defence law and local regulations for storage and handling.

Storage condition to avoid

Keep fire away.
Keep away from heat source, steam pipe and direct sunlight. Store in cool places.

Safe container materials

No information available.

8. Exposure controls and personal protection**8.1 Control parameters**

Administrative levels (Industrial Safety and Health Act)

Administrative levels are not established.

Occupational exposure limits

Japan Society for Occupational Health and ACGIH do not determine adopted value about powder-dust of PBT resin.
Generally, data shown below is known about dusts.

Recommended value of Japan Society for Occupational Health (2011)

Third class dust.
The weighted average per hour: inhaled dusts $2\text{mg}/\text{m}^3$, total dusts $8\text{mg}/\text{m}^3$.

Recommend value of ACGIH (2011)

General dust.
The weighted average per hour: inhaled dusts $3\text{mg}/\text{m}^3$, total dusts $10\text{mg}/\text{m}^3$.

DNEL(Derived No Effect Level)

No information available.

PNEC(Predicted No Effect Concentration)

No information available.

8.2 Exposure controls

Partial ventilation is required to eliminate generated gas and powder-dust during processing.

8.3 Individual protection measures

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Against powder-dust: protective mask for powder-dust.

Against gas from molten polymer: protective mask for organic gas.

Hand protection

Wear protective gloves.

Wear heat resistant protection gloves during handling of melting polymer or high temperature polymer.

Eye protection

Wear protective eye glasses with side shields or chemical safety goggles.

Skin and body protection

Wear suitable protective clothing.

It is desirable to wear long sleeve clothing so as not to touch skin directly.

Wear protection clothing of heat-resistance when handling melting polymer.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance (Physical state)	: Solid (pellet)
Appearance (Color)	: White
Odor	: Odorless
Odor threshold	: No information available
pH	: Not applicable
Melting point	: 225°C
Initial boiling point and boiling range	: Nothing
Flash point	: Not available
Evaporation rate	: Not applicable
Flammability (solid, gas)	: Not available
Upper/lower flammability	: Not available
Explosive limits	: Not available
Vapor pressure	: No information available
Vapor density	: No information available
Specific gravity (Relative density)	: 1.31
Solubility	: No information available
Partition coefficient: n-octanol/water	: No information available
Auto ignition temperature	: > 400°C
Decomposition temperature	: No information available
Viscosity	: No information available
Explosive properties	: Nothing
Oxidizing properties	: Nothing

9.2 Other information

No information available

10. Stability and reactivity

10.1 Reactivity

Nothing in particular.

10.2 Chemical stability

This product is considered stable under normal and anticipated storage and handling conditions.

10.3 Possibility of hazardous reactions

This product is considered stable under normal and anticipated storage and handling conditions.

10.4 Conditions to avoid

Direct sunlight, fire, sources of heat etc.

10.5 Incompatible materials

Nothing in particular.

10.5 Hazardous decomposition products

Black smoke, carbon monoxide, carbon dioxide, nitrogen oxides maybe generated in case burning of this product.

11. Toxicological information

Acute toxicity : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Skin corrosion / irritation : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Sensitization, respiratory / skin : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Serious eye damage / eye irritation : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Germ cell mutagenicity : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Carcinogenicity : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Reproductive toxicity : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Specific target organ toxicity (Single exposure) : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Specific target organ toxicity (Repeated exposure) : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Aspiration hazards : Classification not possible. (N/A)

Others:

As for articles that are "Classification not possible", there are no instances reported on harmful effects to health and environment, according to recent datum.

12. Ecological information

12.1 Ecotoxicity

Acute (short-term) : Not classified.
It is classified into "Not classified" based on judgment theory of a mixture.

Chronic (long-term) : Not classified
It is classified into "Not classified" based on judgment theory of a mixture.

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Adverse effect to the ozone layer

No information available.

12.6 Other adverse effect(s)

No information available.

13. Disposal considerations

13.1 Waste treatment methods

Dispose to an authorized waste collection point
Follow the local law and regulations of waste disposal and prevention against public nuisance.
Do not cast waste (waste fluid, solid waste and washing drainage etc.) that includes this product directly into a river, or bury it underground.
Check if there is no resin left, if disposing the package after use. (paper package, flexible container etc.)
Follow the local law and regulations of waste disposal.
Do not use the package for other purposes.

14. Transport information

14.1 UN number

Not applicable.

14.2 UN proper shipping name

Not applicable.

14.3 Transport hazard

Not applicable.

14.4 Packing group

Not applicable.

14.5 Environmental hazards

Not applicable.

14.6 Special precautions for user

Not information available.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

14.8 The Laws and Regulations for transportation in Japan

Land transportation : Not applicable.
Marine transportation : Not applicable.
Air transportation : Not applicable.

TORAY INDUSTRIES, INC. SAFETY DATA SHEET

MSDS No.	:	TPM/PBT003/EN/01
Issue No.	:	3.0
Issued	:	2006-02-13
Revised	:	2014-09-23

Product: TORAYCON 1200M NATURAL PBT RESIN

14.9 Specific safety measures and conditions on transport

Covering is necessary for shutting off sunlight and rain.
Handle gently to avoid damaging bags.
Caution for slipping by the scattered pellets.

14.10 ERG Guide No.

Not applicable.

15. Regulatory information

We are not able to check up the regulatory information in regard to the substances in your country or region. Therefore, we request this matter would be filled by your responsibility. Regulatory information with regard to this product in your country or in your region should be examined by your own responsibility. Ensure this product in compliance with federal requirements and ensure conformity to local regulations

16. Other information

Date of issue/Date of revision

Date of issue 2014/09/23

Revised item Revision contents of SDS according to JIS Z 7253:2012

References:

JIS Z 7252:2009

Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"

JIS Z 7253:2012

Hazard communication of chemicals based on GHS-Labeling and Safety Data Sheet (SDS)

Disclaimer

The information relates to this specific material. It may not be valid for this material, if used in combination with any other materials or in any process. It is the user's responsibility to satisfy himself as to the suitability and completeness of this information for his own particular use. The information herein is given in good faith, but no warranty, express or implied, is made. Please consult us for further information. To the best of our knowledge, the information contained herein is accurate. However, we assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of user. All materials may present unknown hazards and should be used in caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It is advised to make their own tests to determine the safety and suitability of each such product or combination for their own purposes

Resin is usually safe itself, so as for the calculation of division, acute toxicity (oral) is calculated by LD50 as more than 10000.