

SAFETY DATA SHEET (SDS)

1. Chemical Product and Company Identification

1.1 Product name

TOYOLAC™ 500 322M

1.2 Recommended use of the chemical and restrictions on use

Recommended use : Medical device.

Restrictions on use : TORAY MAKES NO REPRESENTATION OR WARRANTY, WHETHER EXPRESSED OR IMPLIED, IN RESPECT OF FITNESS FOR A PARTICULAR PURPOSE AND SAFETY OF THIS MATERIAL. YOU WILL BE SOLELY RESPONSIBLE FOR ASCERTAINING THE SUITABILITY OF THIS MATERIAL FOR YOUR PURPOSE, INCLUDING BUT NOT LIMITED TO, MEDICAL APPLICATION OR FOOD CONTACT APPLICATION PURPOSES. AND DO NOT USE FOR AN INTERNAL IMPLANTATION.

1.3 Supplier's detail

Name of Supplier : Toray Plastics (Malaysia) Sdn. Berhad

Address : 2628, MK 1, SPT, Lorong Perusahaan 4, Prai Free Industrial Zone, 13600 Prai, Penang, Malaysia.

Telephone No. : (60)4 – 398 8088

Fax No. : (60)4 – 390 8975, (60)4 – 397 7264

URL : www.torayplastics.com.my

Sales Department : ABS Sales & Marketing Division

Person In Charge : General Manager

Technical Department : Technical & Quality Division

Person In Charge : General Manager

1.4 Emergency phone number

(60)4 – 398 8088

2. Hazards Identification

2.1 GHS classification of the substance or mixture

This product is not classified under hazardous according to JIS Z 7252: 2019 (Classification of chemicals based on GHS).

2.2 GHS label elements

Not applicable.

2.3 Other hazards which do not result in classification

Small amount of volatile gases may be released and may irritate eyes, nose and throat.

Use adequate local exhaust ventilation during drying and molding.

Sweep up and dispose of spilled resin to eliminate slipping hazard.

Don't pile up too high in order to avoid injury caused by falling of the product.

2.4 Major symptom and envisioned emergency

No information available.

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3. Composition / Information on Ingredients

Substance / Mixture : Mixture
Chemical Name : Mixture of Acrylonitrile-Butadiene-Styrene Copolymers and Additives
Synonyms : ABS Resin

	Common chemical name	Chemical formula	CAS No.	ENCS No.	ISHL No.	Composition
1	Acrylonitrile-Butadiene-Styrene Copolymer (or Mixture of A, B and / or C)	-	Regd.	Regd.	Existing	95% or more
A	Acrylonitrile-Butadiene-Styrene Copolymer	-[(C8H8)k-(C3H3N)l-(C4H6)m]n-	9003-56-9	6-176	Existing	-
B	Acrylonitrile-Styrene Copolymer	-[(C8H8)k-(C3H3N)l]m-	9003-54-7	6-126	Existing	-
C	Copolymer of Acrylonitrile, Styrene and other component (other component: 0-10%)	-	Regd.	Regd.	Existing	-
2	Additives	-	Regd.	Regd.	Existing	5% or less
3	Styrene (Impurities which not contribute to GHS classification)	C8H8	100-42-5	3-4	323	0.05-0.2%

4. First-Aid Measures

4.1 Inhalation

Call a POISON CENTER / doctor if you feel unwell.
Remove victim to fresh air and keep at rest in a position comfortable for breathing.
It is hard to happen to inhale a pellet.
If you breathe the much gas and fume from melting resin, remove casualty to fresh air.
Make sure that the victim sees a physician, if he has a cough or dyspnea.

4.2 Skin contact

Call a POISON CENTER / doctor if you feel unwell.
Rinse with water. If you touch the aggregates of the gas from the melting resin, wash the affected area under water using a mild soap.
If you touch melting resin, wash immediately with cold water and seek medical advice.

4.3 Eye contact

Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse your eyes gently with clean water for at least 15 minutes. Consult a doctor to receive medical treatment as soon as possible.
Do not let the victim rub his eyes/keep his eyes tightly closed.

4.4 Ingestion

Call a POISON CENTER/doctor if you feel unwell.

4.5 Most important symptoms and effects, both acute and delayed

No information available.

4.6 Precautions required to protect first-aiders

No information available.

4.7 Notes for the doctor

No information available.

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5. Fire-Fighting Measures

5.1 Suitable extinguishing media

Water spray / Water jet / Foam / Powder / Carbon dioxide (CO₂).

5.2 Unsuitable extinguishing media

Nothing in particular.

5.3 Special hazards arising from the substance or mixture

Toxic fumes or gas formed during combustion (Carbon monoxide / Nitrogen oxides / Carbon dioxide etc.).
Fires involving this material produce large amounts of sooty smoke.

5.4 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.

5.5 Special protective actions for fire-fighters

Firefighters should wear proper protective equipment.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Sweep up spilled pellets on road or floor to avoid tripping.

6.2 Environmental precautions

Do not discharge to sewers or into drain.

6.3 Methods and materials for containment and cleaning up

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

6.4 Preventive measures against second disasters

Remove possible sources of ignition in the surrounding area.

7. Handling and Storage

7.1 Precautions for safe handling

Technical measures:

Exposure control of handler:

Do not breathe dust / gas / fume.

Do not eat, drink or smoke when using this product.

Prevention of fire / explosion:

Take precautionary measures against static discharges.

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Local / general exhaust ventilation:

Because gas is generated when handling molten resin with molding machine or extruder, use adequate local ventilation.

In addition, in a building, the work space carrying out above work, try for total air ventilation with ventilation fans and soon.

Precautions:

Do not damage containers.

Avoid contact of containers with sharp edges.

Prevent deposition of dust.

Don't breathe the gas generated by processing, because it stimulates skin and respiratory organs and it is possible to feel unwell if you breathe many gas.

Prevent deposition of dust because a dust explosion may happen by static electricity or electric spark.

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

Proper storage condition:

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

Keep away from direct sunlight, water leak, moisture and sources of heat and ignition. Store in the well-ventilated place and locked up.

Storage condition to avoid:

Keep fire away.

Safe container materials:

Use unbreakable container and packaging materials satisfied storage condition.

8. Exposure Control / 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 of powder-dust of ABS resin. Generally, data shown below is known about dusts.

Recommended value of Japan Society for Occupational Health (2020) Class 3 dusts:

The weighted average per hour: Respirable dust 2 mg/m³, total dust 8 mg/m³.

Recommend value of ACGIH (2020) General dust:

The weighted average per hour: Inhalation dust 3 mg/m³, total dust 10 mg/m³.

DNEL (Derived No Effect Level):

No information available.

PNEC (Predicted No Effect Concentration):

No information available.

8.2 Exposure controls

Because gas is generated when high temperature processing, use adequate local ventilation to keep comfortable work environment.

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8.3 Individual protection measures

Respiratory protection:

Because dust is generated when processing with machine, sanding and so on, wear dust protective mask. When you may inhale gas and fume, wear respirator for organic gas.

Hand protection:

It is desirable to wear protection gloves so as not to touch skin directly.

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

Eye / face protection:

Wear protective glasses or safety goggles.

Skin and body protection:

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

Physical state	: Pellet shaped solid
Color	: Pale yellow
Odor	: None
pH	: Not applicable
Melting point / freezing point	: This product gradually becomes soft over a broad range (130 – 150 °C)
Boiling point or initial boiling point and boiling range	: No information available
Flash point	: No information available
Flammability (solid, gas)	: No information available
Explosion limit / flammability limit (Upper)	: No information available
Explosion limit / flammability limit (Lower)	: 60 g/m ³ (particle size < 0.2 mm)
Vapor pressure	: No information available
Relative vapor density	: No information available
Relative density	: 1.02 – 1.08
Solubility	: Insoluble in water. The resin part is soluble in organic solvent
Octanol / water partition coefficient	: No information available
Auto-ignition temperature	: About 405 °C
Decomposition temperature	: No information available
Kinematic viscosity	: No information available
Particle characteristics	: No information available
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 ordinary storage and handling condition.

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10.3 Possibility of hazardous reactions

This product is considered a stable material 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.

10.6 Hazardous decomposition products

Black smoke, carbon dioxide, carbon monoxide, nitrogen oxide and so on may be generated in the case of combustion.

11. Toxicological Information

Acute toxicity	: Not classified in GHS category based on the classification criteria for mixtures.
Skin corrosion / irritation	: Classification not possible. (No information available)
Serious eye damage / eye irritation	: Classification not possible. (No information available)
Sensitization, respiratory / skin	: Classification not possible. (No information available)
Germ cell mutagenicity	: Not classified in GHS category based on the classification criteria for mixtures.
Carcinogenicity	: Not classified in GHS category based on the classification criteria for mixtures.
Reproductive toxicity	: Not classified in GHS category based on the classification criteria for mixtures.
Specific target organ toxicity (Single exposure)	: Not classified in GHS category based on the classification criteria for mixtures.
Specific target organ toxicity (Repeated exposure)	: Not classified in GHS category based on the classification criteria for mixtures.
Aspiration hazards	: Classification not possible. (No information available)

12. Ecological Information

Ecotoxicity (Acute)	: Not classified in GHS category based on the classification criteria for mixtures.
Ecotoxicity (Chronic)	: Not classified in GHS category based on the classification criteria for mixtures.
Persistence and degradability	: Classification not possible. (No information available)
Bioaccumulative potential	: Classification not possible. (No information available)
Mobility in soil	: Classification not possible. (No information available)
Adverse effect to the ozone layer	: Classification not possible. (No information available)

13. Disposal Considerations

Information for proper disposal, recycling, or reclamation of the substance or mixture and / or its container to assist in the determination of safe and environmentally preferred waste management.

Dump the waste matters following law, rules and regulations.

Dispose to an authorized waste collection point.

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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.).

Do not use the package for other purposes.

14. Transport Information

International regulation:

UN number	: Not applicable
UN proper shipping name	: Not applicable
Transport hazard class(es)	: Not applicable
Packing group	: Not applicable
Environmental hazards	: Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	: Not applicable

Specific safety measures and conditions on transport:

Avoid wetting or rough handling so that the packaging will not be damaged. In case the bags are damaged and the pellets are scattered, pay attention so that no one will slip and fall.

All of the materials that spilled shall be rapidly collected.

Take precautionary measures against static discharges when using pneumatic transportation.

The Laws and Regulations for transportation in Japan:

Land transportation	: Not applicable
Marine transportation	: Not applicable
Air transportation	: Not applicable
ERG Guide No.	: Not applicable

15. Regulatory Information

Information regarding regulations / legislation specific for the product:

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.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other Information / References

Date of issue : 20 February 2023

Revised items : Not applicable

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