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## Material Safety Data Sheet

### 1. Chemical Product and Company Identification

Product name : TOYOLAC 900 (Suffix:352)

Name of supplier : TORAY Industries, Inc.

Address :

Nihonbashi Mitsui Tower, 1-1, Nihonbashi-Muromachi 2-chome,Chuo-ku, Tokyo 103-8666, Japan

Sales Department :

TOYOLAC Sales Department,Automotive Products Department

Manager of Sales Department : Global Operation Group

Telephone number : +81-3-3245-5461

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E-mail Address : Toray-jyushi@nts.toray.co.jp

Emergency phone No. :

+81-3-3245-5461

Technical Department :

TOYOLAC Technical Department

Manager of Technical Department : TOYOLAC Technical Department Manager

Phone No. : +81-436-23-0657

Recommended use of the chemical and restrictions on use :

Recommended use :For household appliance, electronic materials, industrial materials.

Use restriction : Do not use for an internal implantation.

If considering use for medical purposes or food container purposes, please contact us in advance about the specific usage.

Product No.(MSDS No.) : D3E-RA900352N-1

### 2. Hazards Identification

GHS Classification :

Health Hazards :

Acute toxicity -Oral : Not classified

Acute toxicity -Dermal : Classification not possible

Acute toxicity -Inhalation : Classification not possible

Skin corrosion/irritation : Classification not possible

Serious eye damage/eye irritation : Classification not possible

Respiratory sensitization : Classification not possible

Skin sensitization : Classification not possible

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific Target Organ/Systemic Toxicity (Single Exposure) : Not classified

Specific Target Organ/Systemic Toxicity (Repeated Exposure) : Not classified

Aspiration hazards : Classification not possible

Environmental Hazards :

Aquatic environmental hazards : Not classified

Chronic environmental hazards : Not classified

Other hazards which are not covered by the GHS :

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.

### 3. Composition/Information on Ingredients

Substance/Mixture : Mixture

Chemical name :

Mixture of Methylmethacrylate-Acrylonitrile-Butadiene-Styrene Copolymers and additives

Synonyms :

MABS Resin

Common chemical name

Methylmethacrylate-Acrylonitrile-Butadiene-Styrene Copolymer(A)

(or Mixture of(A), (B)Methylmethacrylate-Acrylonitrile-Styrene Copolymer and/or (C)Copolymer of Acrylonitrile, Styrene and other component)

Composition : 95% or more

CAS No. : Regd.

ENCS No. : Regd.

ISHL No. : Existing

TSCA : Regd.

Common chemical name

(A)Methylmethacrylate-Acrylonitrile-Butadiene-Styrene Copolymer

Chemical formula(Constitutional/Structural formula)

-[(C<sub>5</sub>H<sub>8</sub>O<sub>2</sub>)<sub>j</sub>-(C<sub>8</sub>H<sub>8</sub>)<sub>k</sub>-(C<sub>3</sub>H<sub>3</sub>N)<sub>L</sub>-(C<sub>4</sub>H<sub>6</sub>)<sub>m</sub>]<sub>n</sub>-

CAS No. : 9010-94-0

ENCS No. : 6-720, 6-274

ISHL No. : Existing

TSCA : Regd.

Common chemical name

(B)Methylmethacrylate-Acrylonitrile-Styrene Copolymer

Chemical formula(Constitutional/Structural formula)

-[(C<sub>5</sub>H<sub>8</sub>O<sub>2</sub>)<sub>k</sub>-(C<sub>8</sub>H<sub>8</sub>)<sub>L</sub>-(C<sub>3</sub>H<sub>3</sub>N)<sub>m</sub>]<sub>n</sub>-

CAS No. : 25213-88-1

ENCS No. : 6-274

ISHL No. : Existing

TSCA : Regd.

Common chemical name

(C)Copolymer of Acrylonitrile, Styrene and other component

(other component:0-10%)

CAS No. : Regd.

ENCS No. : Regd.

ISHL No. : Existing

TSCA : Regd.

Common chemical name

Additives

Composition : 5% or less

CAS No. : Regd.

ENCS No. : Regd.

ISHL No. : Existing

#### 4. First-Aid Measures

Inhalation :

S45-In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S63-In case of accident by inhalation: remove casualty to fresh air and keep at rest.

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.

Skin contact :

S45-In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible.).

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.

Eye contact :

Gently rinse the affected eyes with clean water for at least 15 minutes. Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible..

Have the victim remove contact lenses if he is wearing them and continue rinsing.

Do not let the victim rub his eyes.

Ingestion :

S45-In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Protective measures for a first aid person :

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

#### 5. Fire-Fighting Measures

Extinguishing Media :

S43-In case of fire, use

water mist, water jet, foam, dry powder, CO<sub>2</sub>,

Specific Hazards under fire :

S41-In case of fire and/or explosion do not breathe fumes.

Toxic gases will form upon combustion of :

carbon monoxide, nitrogen oxides, Carbon dioxide etc.

Fires involving this material produce large amounts of sooty smoke.

Specific fire-fighting measures :

Apply water from a safe distance to cool and protect surrounding area.

Move container from fire areas if it can be done without risk.

Keep personnel removed from and upwind of fire.

Evacuate non-essential personnel to safe area.

Protection of fire-fighters :

Firefighters should wear proper protective equipment.

#### 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures :

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

Measures for environmental effects :

Do not wash away into shower or waterway.

Methods and materials for containment and cleaning up :

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

Preventive measures for secondary accident :

Shut off all sources of ignition; No flares, smoking or flames in area.

## 7. Handling and Storage

### Handling :

#### Preventive measures :

##### Exposure control for handling personnel :

S20-When using do not eat or drink.

S21-When using do not smoke.

S22-Do not breathe dust.

S23-Do not breathe

gas

fumes

##### Protective measures against fire & explosion :

S33-Take precautionary measures against static discharges.

#### Local ventilation / Total air 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 so on.

#### Safety treatments :

Prevent deposition of dust.

#### Safety Measures/Incompatibility :

S29-Do not empty into drains.

Avoid rough handling or dropping.

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.

### Storage :

#### Recommendation for storage :

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.

#### Incompatible storage condition :

S15-Keep away from heat.

#### Recommendation on container and packaging materials :

Use unbreakable container and packaging materials satisfied storage condition.

## 8. Exposure Control/Personal Protection

### Engineering measures :

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

### Adopted value :

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(2008) Class 3 dusts

The weighted average per hour : Respirable dust 2mg/m<sup>3</sup>, Total dust 8mg/m<sup>3</sup>

Recommend value of ACGIH(2003) General dust

The weighted average per hour : Inhalation dust 3mg/m<sup>3</sup>, Total dust 10mg/m<sup>3</sup>

### Personal protective equipment :

#### 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 protection :**

Wear protective eyeglasses or chemical 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.

**Safety and Health measures :**

Wash hands before breaks and at the end of work.

Do not eat, drink or smoke at work.

**9. Physical and Chemical Properties****Physical properties :**

Appearance : pellet-shaped solid

Color : Colorless

Odor : none

pH : N.A.

**Phase change temperature :**

Boiling point : N.A.

Boiling range(Mixture) : N.A.

Melting point : This Product gradually becomes soft over a broad range . (between 130-150 degree)

Decomposition temperature : N.A.

Flash point : N.A.

Ignition temperature : about 405 degree

Explosion limit Upper : N.A.

Explosion limit Lower : 60g/m<sup>3</sup>(particle size<0.2mm)

Vapour pressure : N.A.

Vapour density : N.A.

Density : 1.05-1.11

**Solubility :**

Solubility in solvent :

Insoluble in water. The resin part is soluble in organic solvent.

Octanol /water partition coefficient : N.A.

**10. Stability and Reactivity****Stability :**

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

**Possibility of hazardous reactions :**

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

**Dangerous condition :**

Direct sunlight, fire, sources of heat, etc.

**Incompatible materials :**

none

**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

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

Skin corrosion/irritation :

Classification not possible.(N.A.)

Serious eye damage/eye irritation :

Classification not possible.(N.A.)

Respiratory or skin sensitization :

Classification not possible.(N.A.)

Germ cell mutagenicity :

Not classified

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

Carcinogenic effects :

Not classified

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

Toxicity for reproduction :

Not classified

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

Specific Target Organ/Systemic Toxicity (Single Exposure) :

Not classified

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

Specific Target Organ/Systemic 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.)

## 12. Ecological Information

Ecological toxicity :

Classification not possible.(N.A.)

Biodegradability :

Classification not possible.(N.A.)

Bioaccumulation :

Classification not possible.(N.A.)

Mobility in soil :

Classification not possible.(N.A.)

Other adverse effects :

Hazardous to the aquatic environment/Acute : Not classified

Hazardous to the aquatic environment/Chronic : Not classified

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

## 13. Disposal Consideration

Dump the waste matters following law, rules and regulations.

## 14. Transport Information

UN No./Packaging group :

N.A.

Marine pollutant :

N.A.

Regulation in Japan :

N.A.

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.

## 15. Regulatory Information

Other 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.

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

## 16. Other Information/References

Other information :

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.

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