SAFETY DATA SHEETS

This SDS packet was issued with item:

078925219

N/A

Safety Data Sheet
TERLUX® 2812 TR TRANSPARENT

1. Product and Company Identification

Company
Styrolution America LLC
25846 SW Frontage Road
Channahon, IL 60410, USA

24 Hour Emergency Response Information
For Chemical Emergency
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887
(collect calls accepted)

2. Hazards Identification

Emergency overview

MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
INGESTION MAY CAUSE GASTRIC DISTURBANCES.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of dusts.
Wear safety glasses with side-shields.
Wear chemical resistant protective gloves.
Eye wash fountains and safety showers must be easily accessible.

State of matter: solid
Colour: The colour is derived from the trade name.
Odour: faint specific odour

Potential health effects

Primary routes of exposure:
Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:
Contact with molten product may cause thermal burns. The resin in pelleted form poses a low hazard.

Irritation / corrosion:
No irritation is expected under intended use and appropriate handling.

Signs and symptoms of overexposure:
No significant reaction of the human body to the product known.

Potential environmental effects

Aquatic toxicity:

The product has not been tested. The statement has been derived from the structure of the product.

Degradation / environmental fate:
In accordance with the required stability the product is not readily biodegradable. The product has not been tested. The statement has been derived from the structure of the product.

Bioaccumulation / bioconcentration:
Discharge into the environment must be avoided.

3. Composition / Information on Ingredients

CAS Number	Content (W/W)	Chemical name
25101-28-4	> 25.0 - < 45.0 %	Copolymer of 1,3-butadiene, methyl methacrylate, n-butyl acrylate, styrene
9003-54-7	> 25.0 - < 45.0 %	Styrene-acrylonitrile copolymer
9011-87-4	> 20.0 - < 40.0 %	2-Propenoic acid, 2-methyl-, methyl ester, polymer with methyl 2-propenoate

4. First-Aid Measures

If inhaled:
Remove the affected individual into fresh air and keep the person calm. If difficulties occur: Seek medical attention.

If on skin:
Areas affected by molten material should be quickly placed under cold running water. Burns caused by molten material require hospital treatment.

If in eyes:
In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek immediate medical attention.

If swallowed:
Rinse mouth and then drink plenty of water. If difficulties occur: Seek medical attention.

Note to physician

Treatment:	Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Flash point:	> 400 °C	
Autoignition:	> 400 °C	(DIN 51794)
Lower explosion limit:		As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Upper explosion limit:		As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Flammability:	not highly flammable	
Self-ignition temperature:		not self-igniting

Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide

Hazards during fire-fighting:
carbon dioxide, carbon monoxide, hydrogen cyanide,
The substances/groups of substances mentioned can be released in case of fire.

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:
Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions:
Avoid inhalation. Sources of ignition should be kept well clear.

Environmental precautions:
This product is not regulated by RCRA. This product is not regulated by CERCLA ('Superfund').

Cleanup:
After decontamination, spill area can be washed with water.
For large amounts: Sweep/shovel up. Vacuum up spilled product.

Further information:
High risk of slipping due to leakage/spillage of product.

7. Handling and Storage

Handling

General advice:
Processing machines must be fitted with local exhaust ventilation. When working on exaust systems special safety precautions must be taken, because dangerous substances can accumulate in the residue of the exaust system. Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:
Avoid dust formation. Dust can form an explosive mixture with air. Provide exhaust ventilation. When the product is ground (chopped), dust explosion regulations should be noted.

Storage

General advice:
Protect against moisture. Avoid extreme heat. Avoid all sources of ignition: heat, sparks, open flame.

8. Exposure Controls and Personal Protection

Components with workplace control parameters

Styrene	OSHA	TWA value 100 ppm ; CLV 200 ppm ; max. conc. 600 ppm ;
	ACGIH	TWA value 20 ppm ; STEL value 40 ppm ;
Methyl methacrylate	OSHA	PEL 100 ppm 410 mg/m3 ;
	ACGIH	TWA value 50 ppm ; STEL value 100 ppm ;
acrylonitrile	OSHA	TWA value 2 ppm ; STEL value 10 ppm ; OSHA Action level 1 ppm ; Skin Designation ; The substance can be absorbed through the skin.

	ACGIH	TWA value 2 ppm ; Skin Designation ; The substance can be absorbed through the skin.
butadiene	OSHA	TWA value 1 ppm ; STEL value 5 ppm ; OSHA Action level 0.5 ppm ;
	ACGIH	TWA value 2 ppm ;

Advice on system design:
Provide exhaust ventilation at sources when processing molten product. Provide local exhaust ventilation to control dusts/vapours.

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) particulate respirator.

Hand protection:
Wear gloves to prevent contact during mechanical processing and/or hot melt conditions.

Eye protection:
Safety glasses with side-shields. Wear splash goggles to protect from hot molten substance/product.

Body protection:
Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:
Avoid contact of molten material with skin. Avoid inhalation of dusts/mists/vapours. Eye wash fountains and safety showers must be easily accessible. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Form:	pellets	
Odour:	faint specific odour	
Colour:	The colour is derived from the trade name.	
pH value:		not soluble
softening temperature:	> 100 °C	(DIN EN ISO 306)
onset of boiling:		The substance / product decomposes therefore not determined.
Vapour pressure:		not applicable
Density:	approx. 1.08 g/cm3	(20 °C, 1 bar) (DIN 53479)
Bulk density:	approx. 600 kg/m3	(20 °C, 1 bar) (DIN 53466)
Vapour density:		not applicable, The product is a non-volatile solid.
Partitioning coefficient n-octanol/water (log Pow):		not applicable
Viscosity, dynamic:		not relevant
Solubility in water:		insoluble

10. Stability and Reactivity

Conditions to avoid:
Avoid extreme heat. Avoid all sources of ignition: heat, sparks, open flame.

Substances to avoid:
strong oxidizing agents

Hazardous reactions:
No hazardous reactions when stored and handled according to instructions.

Decomposition products:
Hazardous decomposition products: hydrogen cyanide, monomers, oxides, gases/vapours, hydrocarbons, cyclic low molecular weight oligomers, Gaseous products of degradation can be given off if the product is greatly overheated.

Thermal decomposition:
300 °C
To avoid thermal decomposition, do not overheat.

Oxidizing properties:
not fire-propagating

11. Toxicological information

Acute toxicity

Information on: acrylonitrile
Assessment of acute toxicity:
Of high toxicity after short-term inhalation. Of high toxicity after short-term skin contact. Of high toxicity after single ingestion.

Information on: Styrene
Assessment of acute toxicity:
Of moderate toxicity after short-term inhalation. High concentrations in the air may cause narcosis. Virtually nontoxic after a single skin contact. Virtually nontoxic after a single ingestion. Harmful: may cause lung damage if swallowed.

Irritation / corrosion

Information on: acrylonitrile
Assessment of irritating effects:
Irritating to skin. May cause severe damage to the eyes.

Information on: Styrene
Assessment of irritating effects:
Eye contact causes irritation. Skin contact causes irritation.

Sensitization

Information on: Styrene
Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Carcinogenicity

Information on: acrylonitrile
The substance caused cancer in animal studies.
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).

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The substance caused cancer in animal studies.
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).
Information on: Styrene
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans). NTP listed as reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Information on: acrylonitrile
Animal studies gave no indication of a fertility impairing effect at doses which were not toxic to the parental animals.

Other Information:

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

12. Ecological Information

Degradability / Persistence
Biological / Abiological Degradation

Evaluation: The polymer component of the product is poorly biodegradable.
The insoluble fraction can be removed by mechanical means in suitable waste water treatment plants.

Bioaccumulation

The product will not be readily bioavailable due to its consistency and insolubility in water.

Other adverse effects:

No data can be given due to the product's insolubility in water.

13. Disposal considerations

Waste disposal of substance:
Must be disposed of or incinerated in accordance with local regulations.

Container disposal:
Uncontaminated packaging can be recycled.

14. Transport Information

Land transport
USDOT

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Not hazardous;

State regulations

CA Prop. 65:
THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

16. Other Information

Recommended use: for industrial processing only

HMIS III rating
Health: 1 Flammability: 1 Physical hazard: 0

NFPA and HMIS use a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates extreme danger. Although similar, the two rating systems are intended for different purposes, and use different criteria. The NFPA system was developed to provide an on-the-spot alert to the hazards of a material, and their severity, to emergency responders. The HMIS system was designed to communicate workplace hazard information to employees who handle hazardous chemicals.

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

MSDS Prepared by:
Styrolution NA Product Regulations
Info_North_America@styrolution.com

MSDS Prepared on: 2011/12/13

DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.
This product is of industrial quality and unless otherwise specified or agreed intended exclusively for industrial use.
STYROLUTION WILL NOT MAKE ITS PRODUCTS AVAILABLE TO CUSTOMERS FOR USE IN THE MANUFACTURE OF MEDICAL DEVICES WHICH ARE INTENDED FOR PERMANENT IMPLANTATION IN THE HUMAN BODY OR IN PERMANENT CONTACT WITH INTERNAL BODILY TISSUES OR FLUIDS.

END OF DATA SHEET

Version: **1.1**
Revision Date**: 05.01.2017**

Becton, Dickinson and Company
BD, Franklin Lakes, NJ 07417 USA
www.bd.com

Product name: SYRINGE 10ML LL S/C 200
Product No.: 302995

Article Statement

This product is considered an “article” and does not require a Material Safety Data Sheet according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard or the EU REACH Regulation (EC) No 1907/2006. According to these agencies, an article is an item which is formed into a specific shape or design during manufacture and which does not release or otherwise result in exposure to a hazardous chemical under normal use.

To the best of our knowledge, the information contained herein is accurate. It is the responsibility of the user to use the article for the purpose for which it is intended and to exercise caution during use.

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name	:	Metocene MF650W
CAS Number:	:	9003-07-0
Chemical characterization	:	Polypropylene Homopolymer
Chemical name	:	Polypropylene
Synonyms	:	1-Propene, homopolymer, PP
Identified uses	:	Manufacture of plastic articles by injection molding, extrusion or other conversion process.
Prohibited uses	:	FDA Class III medical devices; European class III medical devices; Health Canada class IV Medical Devices; Applications involving permanent implantation into the body; Life-sustaining medical applications

Company Address
Equistar Chemicals, LP
LyondellBasell Tower, Suite 300
1221 McKinney St.
P.O. Box 2583
Houston Texas 77252-2583

Company Telephone
Customer Service 888 777-0232
product.safety@lyb.com

Emergency telephone number
EQUISTAR 800-245-4532

E-mail address : product.safety@lyb.com
Responsible/issuing person

2. HAZARDS IDENTIFICATION

GHS Classification

OSHA Hazard Category: Combustible Dust

Label elements

Signal word : Warning

Hazard Statements : May form combustible dust concentrations in air.

Other hazards

No additional information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Ingredients

Chemical name	CAS-No.	Weight %
Polypropylene	9003-07-0	> 99.5 %

Contains: Additives and stabilizers

4. FIRST AID MEASURES

General advice : Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid.

If inhaled : Remove person to fresh air. If signs/symptoms continue, get medical attention.
In case of excessive inhalation of fumes that may be generated during heating of this material, move the person to fresh air.
Obtain medical attention.
Keep person warm, if necessary give Cardio-Pulmonary Resuscitation (CPR)

In case of skin contact : If molten material contacts the skin, immediately flush with large amounts of water to cool the affected tissue and polymer.
Do not attempt to peel polymer from skin as this will remove the skin.
Obtain immediate emergency medical attention if burn is deep or extensive.

In case of eye contact : Flush eyes thoroughly with water for several minutes and seek medical attention if discomfort persists.

: In case of eye contact with molten polymer:
Continuously flush eye(s) with cool running water for at least 15 minutes.
Beyond flushing, DO NOT attempt to remove the material adherent to the eye(s).
Immediately seek medical attention.

If swallowed : Adverse health effects due to ingestion are not anticipated.

Notes to physician

Symptoms	:	Inhalation of process fumes and vapors may cause soreness in the nose and throat and coughing.
Hazards	:	Dust contact with the eyes can lead to mechanical irritation. Molten polymer may cause thermal burns.
Treatment	:	Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	SMALL FIRE: Use dry chemical, CO2, or water spray.
	:	LARGE FIRES: Use water spray hose nozzles from a safe location.
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Keep away from heat and sources of ignition. Dust particles from this product are combustible particulate solids that present a flash fire or explosion hazard when suspended in air. Polymer dust layer melts on the hot surface before ignition can occur In case of fire hazardous decomposition products may be produced such as: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
	:	The formation of hydrocarbons and aldehydes are possible in the initial stages of a fire (especially in between 400 C and 700 C)
Special protective equipment for fire-fighters	:	Wear approved positive pressure self-contained breathing apparatus and firefighter protective clothing.
Further information	:	Combustible particulate solid, will decompose under fire conditions. Calorific Value: 8000 - 11000 kcal/kg Fight fire from safe distance with hose lines or monitor nozzles. Heat from fire may melt, decompose polymer, and generate flammable vapors. Move containers from fire area if it can be done without risk. Evacuate immediately in the event of opening of storage container pressure relief devices or discoloration of container. Always stay away from tanks engulfed in fire.

Do not attempt to get on top of storage containers involved in fire.
Cool storage containers with large volumes of water even after fire is out.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Equip responders with proper protection. Creates dangerous slipping hazard on any hard smooth surface. Equip emergency responders with proper personal protective equipment (PPE) Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Potential combustible dust hazard. Polymer particles create slipping hazard on hard smooth surfaces.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
Methods for containment / Methods for cleaning up	:	On land, sweep/shovel into suitable disposal containers or vacuum using equipment which avoids ignition risk. On water, material is insoluble; collect and contain as any solid. All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	:	Avoid dust accumulation in enclosed space. Use dust collection systems designed per NFPA 654 to avoid dust accumulation. Avoid generating dust; fine dust suspended in air and in the presence of an ignition source is a potential dust explosion hazard. Polymer dust layer melts on the hot surface before ignition can occur Hot surface temperature shall be limited to less than 270°C to avoid direct ignition of a dust cloud. Static discharge (spark), or other ignition sources, in high dust

environments may ignite the dust and result in a dust explosion
Electrostatic charge may build during conveying or handling. Equipment handling polymer should be conductive and grounded (earthed) and bonded.
Metal containers involved in the transfer of this material should be grounded and bonded.
All electrical equipment should conform to applicable electric codes and regulatory requirements for areas handling combustible dusts.
After handling, always wash hands thoroughly with soap and water.
When bringing the material to processing temperatures vapors may develop may condense in the exhaust ventilation. See section 10.

: Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

Fire-fighting class : Polymer will burn but does not easily ignite.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a dry location.
Use good housekeeping practices during storage, transferring and handling. Process enclosures and adequate ventilation should be used to avoid excessive dust accumulation.
Degradation can occur because of exposure to temperature, light and oxidizing agent: trace amounts of light hydrocarbons, compounds of oxidation, aldehydes and acids can be generated.
Store away from excessive heat and away from strong oxidizing agents.
Keep container closed to prevent contamination.
Take measures to prevent the build up of electrostatic charge.

Specific end use(s)

: See Section 1.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Ingredients with workplace control parameters

Occupational Exposure Limits

Ingredients	CAS-No.	Type	Limit Value	Basis Revision Date	Additional Information
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	10 mg/m3 inhalable	US (ACGIH) 2005	
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	3 mg/m3 respirable	US (ACGIH) 2005	
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	15 mg/m3 total dust	US (OSHA) 2005	
Materials that can be formed when handling this product: Non-specified (inert or nuisance) dust		TWA	5 mg/m3 respirable	US (OSHA) 2005	

Consult local authorities for acceptable exposure limits.

Exposure controls

Engineering measures

Follow the recommendations in NFPA 654 (as amended and adopted) for equipment used to handle this product.
Engineering controls, i.e. enclosed systems, should be used whenever feasible to maintain exposures below acceptable criteria. When such controls are not feasible, or sufficient to achieve full conformance, other engineering controls such as local exhaust ventilation should be used.
Equipment and vessels handling combustible dust from this material should be designed to either prevent dust explosions (inerting) or safely vent dust explosions per NFPA 654
Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

Personal protective equipment

Respiratory protection : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Use appropriate respiratory protection where atmosphere exceeds recommended limits.

Where workers could be exposed to dust concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection	:	Wear gloves that provide thermal protection where there is a potential for contact with heated material.
Eye and face protection	:	Dust service goggles should be worn to prevent mechanical injury or other irritation to eyes due to airborne particles which may result from handling this product.
Skin and body protection	:	Wear suitable protective clothing.
Hygiene measures	:	Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Powders or flakes.
Color	:	Translucent to white
Odor	:	Slight.
Odor Threshold	:	No value available.
Flash point	:	No Data Available.
Lower explosion limit	:	The minimum explosive concentration (MEC) for polymer dust varies according to particle size distribution.
Upper explosion limit	:	Not applicable.
Flammability (solid, gas)	:	Polymer will burn but does not easily ignite.
Oxidizing properties	:	Not considered an oxidizing agent.
Autoignition temperature	:	> 300 °C
Decomposition temperature	:	not determined
Melting point/range	:	50 - 170 °C

Boiling point/boiling range	:	Not applicable.
Vapor pressure	:	Not applicable.
Density	:	< 1 g/cm3
Water solubility	:	Insoluble.
Partition coefficient: n-octanol/water	:	No Data Available.
Viscosity, dynamic	:	Not applicable.
Relative vapor density	:	Not applicable.
Evaporation rate	:	Not applicable.
Explosive properties	:	No Data Available.
Other Information	:	No additional information available.

10. STABILITY AND REACTIVITY

Reactivity	:	No known reactivity hazards.
Chemical stability	:	Stable under normal conditions.
Hazardous reactions	:	Will not occur.
Conditions to avoid	:	Avoid contact with strong oxidizers, excessive heat, sparks or open flame.
Materials to avoid	:	Material may be softened by some hydrocarbons.
Hazardous decomposition products	:	Not expected to decompose under normal conditions.
Thermal decomposition	:	Carbon monoxide, olefinic and paraffinic compounds, trace amounts of organic acids, ketones, aldehydes and alcohols may be formed.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Acute oral toxicity	:	Not classified
Acute inhalation toxicity	:	Not classified
Acute dermal toxicity	:	Not classified

Skin corrosion/irritation : Not a skin irritant.

Serious eye damage/eye irritation : Not an eye irritant.
Mechanical irritation is possible.

Respiratory or skin sensitization : Not classified

Chronic toxicity

Carcinogenicity : Not classified

Not classified
Not listed by IARC, NTP, OSHA or EPA.

Germ cell mutagenicity : Not classified

Reproductive toxicity

Effects on fertility / Effects on or via lactation : Not classified

Effects on Development : Not classified

Target Organ Systemic Toxicant - Single exposure : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Target Organ Systemic Toxicant - Repeated exposure : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard : Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Not classified

Persistence and degradability

Biodegradability : Not expected to be biodegradable.

Bioaccumulative potential

Bioaccumulation : This material is not expected to bioaccumulate.

Mobility in soil

Additional advice Environmental fate and pathways : This material is not volatile and insoluble in water.

Results of PBT and vPvB assessment

Not applicable.

Other adverse effects

Additional ecological information : Ecotoxicity is expected to be minimal based on the low water solubility of polymers.

13. Disposal considerations

Waste treatment methods

Product : All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.
Recycle if possible.

: This material is classified as a Non-hazardous Material by RCRA.

14. TRANSPORT INFORMATION

Not regulated for transport

15. REGULATORY INFORMATION

If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

SARA 302/304

This product contains no known chemicals regulated under SARA 302/304.

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

Physical Hazards

Combustible dust

SARA 313

This product contains no known chemicals regulated under SARA 313.

State Reporting

This material is not known to contain a chemical substance known to the State of California to cause cancer, reproductive, or developmental toxicity under California Proposition 65. However, LyondellBasell has not tested for the presence of listed chemical substances.

This product contains no known chemicals regulated by New Jersey's Worker and Community Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

This product contains no known chemicals regulated by Pennsylvania's Right to Know Act.

Other international regulations

Global Inventory Status

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

REACh status
If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that all substances in this preparation have been pre-registered or, where required under REACh, registered, and that we have the intention to proceed with their registration in accordance with the deadlines set forth in REACh. (Regulation (EU) No. 1907/2006)

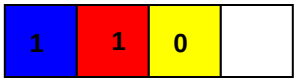
Contact product.safety@lyb.com for additional global inventory information.

16. OTHER INFORMATION

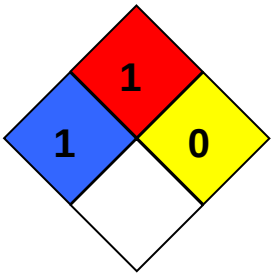
Material safety datasheet sections which have been updated:

Revised Section(s): 1 15 16 December 14 2017

HMIS Classification : Health Hazard: 1
Flammability: 1
Physical hazards: 0



NFPA Classification : Health Hazard: 1
Fire Hazard: 1
Instability: 0



Disclaimer

This document is generated for the purpose of distributing health, safety, and environmental data.
Information is correct to the best of our knowledge at the date of the SDS publication.
It is not a specification sheet nor should any displayed data be construed as a specification.
Before using a product sold by a company of the LyondellBasell family of companies, users should make their own independent determination that the product is suitable for the intended use and can be used safely and legally.
SELLER MAKES NO WARRANTY; EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY) OTHER THAN AS SEPARATELY AGREED TO BY THE PARTIES IN A CONTRACT.

Disclaimer

Users should review the applicable Safety Data Sheet before handling the product.
This product(s) may not be used in the manufacture of any of the following, without prior written approval by Seller for each specific product and application:
(i) U.S. FDA Class I or II Medical Devices; Health Canada Class I, II or III Medical Devices; European Union Class I or II Medical Devices;
(ii) film, overwrap and/or product packaging that is considered a part or component of one of the aforementioned medical devices;
(iii) packaging in direct contact with a pharmaceutical active ingredient and/or dosage form that is intended for inhalation, injection, intravenous, nasal, ophthalmic (eye), digestive, or topical (skin) administration;
(iv) tobacco related products and applications, electronic cigarettes and similar devices.
(v) safety components in automotive applications, for example: air bags, air bag unit housings and covers, seat belt mechanisms, brake systems, pedals and pedal supports, steering systems.

The product(s) may not be used in:
(i) U.S. FDA Class III Medical Devices; Health Canada Class IV Medical Devices; European Class III Medical Devices;
(ii) applications involving permanent implantation into the body;
(iii) life-sustaining medical applications.

All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.
In addition to the above, LyondellBasell may further prohibit or restrict the use of its products in certain applications. For further information, please contact a LyondellBasell representative.

Numerical Data Presentation
The presentation of numerical data, such as that used for physical and chemical properties and toxicological values, is expressed using a comma (,) to separate digits into groups of three and a period (.) as the decimal marker. For example, 1,234.56 mg/kg = 1 234,56 mg/kg.

Language Translations
The information presented in this document has been translated from English by a vendor LyondellBasell believes to be reliable. LyondellBasell and its vendor have made a good-faith effort to verify the accuracy of the translation, but assume no liability or other responsibility for any errors that may have occurred. Please refer to our web site (www.lyondellbasell.com) for the original document written in English.

End of Material Safety Data Sheet

Lubrizol Pellethane® 2363-80AE Thermoplastic Polyurethane Elastomer

Categories: Polymer; Thermoplastic; Elastomer, TPE; Polyurethane, TP; Thermoplastic Polyurethane, Elastomer, Ether Grade

Material Notes: Features: USP Class VI

Available in Americas, Europe, Middle East, Africa, India and Asia

Data provided by Lubrizol

Lubrizol acquired the Pellethane product line from Dow in 2009.

Vendors: No vendors are listed for this material. Please click here if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	1.12 g/cc	0.0405 lb/in³	ASTM D792
Linear Mold Shrinkage	0.0050 - 0.0080 cm/cm @Thickness 1.59 mm	0.0050 - 0.0080 in/in @Thickness 0.0625 in	plaque
Linear Mold Shrinkage, Transverse	-0.00100 - 0.0040 cm/cm @Thickness 1.59 mm	-0.00100 - 0.0040 in/in @Thickness 0.0625 in	plaque
Melt Flow	10 g/10 min @Load 2.16 kg, Temperature 224 °C	10 g/10 min @Load 4.76 lb, Temperature 435 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	81 - 89	81 - 89	ASTM D2240
Tensile Strength, Ultimate	28.9 MPa	4190 psi	ASTM D412
Elongation at Break	550 %	550 %	ASTM D412
50% Modulus	4.80 MPa	4.80 MPa	ASTM D412
100% Modulus	6.10 MPa	885 psi	ASTM D412
300% Modulus	10.3 MPa	1490 psi	ASTM D412
Tear Strength	73.6 kN/m	420 pli	Die C; ASTM D624
Taber Abrasion, mg/1000 Cycles	30	30	H22 Wheel, 1000g; ASTM D1044
Compression Set	30 % @Temperature 25.0 °C, Time 79200 sec	30 % @Temperature 77.0 °F, Time 22.0 hour	ASTM D395 Method B
	80 % @Temperature 70.0 °C, Time 79200 sec	80 % @Temperature 158 °F, Time 22.0 hour	ASTM D395 Method B
Tensile Set	70 %	70 %	Elongation set after break; ASTM D412

Thermal Properties	Metric	English	Comments
CTE, linear	165 µm/m-°C @Temperature 20.0 °C	91.7 µin/in-°F @Temperature 68.0 °F	ASTM D696
Vicat Softening Point	81.7 °C	179 °F	ASTM D1525
Glass Transition Temp, Tg	-47.0 °C	-52.6 °F	

Processing Properties	Metric	English	Comments
Melt Temperature	190 - 205 °C	374 - 401 °F	Molding
	190 - 205 °C	374 - 401 °F	Extrusion
Mold Temperature	15.0 - 60.0 °C	59.0 - 140 °F	
Drying Temperature	80.0 - 95.0 °C	176 - 203 °F	

[En]

Safety Data Sheet

U.S.A.	Mexico	Europe	Singapore	China
+1 507-454-6900	+82 81 8134-0403	+33 3 8025 3000	+65 6863-6580	+86 512-6283-8383

Section 1. Company and Product Identification

PRODUCT NAME: RTP 699 X 119664 Z NS EC-27201 WHITE

RECOMMENDED USE: Injection Molding or Extrusion Compound

RESTRICTIONS ON USE: For industrial processing only. MEDICAL APPLICATION CAUTION: RTP Company does not provide materials for use in any articles to be permanently implanted in the human body or to be permanently in contact with internal bodily fluids or tissues. Unless otherwise expressly agreed to in writing, RTP Company does not provide materials for use in articles to be briefly or temporarily implanted in the human body or to be in contact with internal bodily fluids or tissues.

SUPPLIED BY:
RTP Company
580 East Front Street
Winona, MN 55987 USA
www.rtpcompany.com

Information Telephone: 1-507-454-6900

Safety Data Sheet Coordinator: msds@rtpcompany.com

EMERGENCY TELEPHONE: 1-507-454-6900

Section 2. Hazards Identification

GHS Classification
Not classified

Hazard Pictogram(s)
None

Signal Word
No Signal Word

Other hazards which do not result in classification
US OSHA HAZARD CATEGORY: Warning. May form combustible dust concentrations in air if small particles are generated during further processing, handling, machining, or by other means. Product, as shipped, is not a combustible dust. To reduce the risk for dust explosion do not permit dust to accumulate. If permitted to accumulate, these fines or dust can, under certain conditions, pose an explosion hazard.

Section 3. Composition/Information on ingredients

CHEMICAL CHARACTERIZATION: Mixture. Acrylonitrile-butadiene-styrene terpolymer, ABS.

Chemical Name	SVHC	EC-No.	CAS-No.	Wt. %	GHS Symbols	GHS Statements
No hazardous items exist						

Section 4. First-aid Measures

DESCRIPTION OF FIRST AID MEASURES

FIRST AID - INHALATION: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Consult a physician if symptoms persist or exposure was severe.

FIRST AID - SKIN CONTACT: For thermal burns, immediately flush with cold water. Do not attempt to remove polymer from skin. Obtain medical attention. Wash off with soap and water.

FIRST AID - EYE CONTACT: If eye irritation persists, consult a specialist. Rinse with plenty of water.

FIRST AID - INGESTION: Clean mouth with water and drink plenty of water afterwards. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED: No Information

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: No Information

Section 5. Fire-fighting Measures

EXTINGUISHING MEDIA: Dry Chemical, Water Fog, Carbon Dioxide, Alcohol Foam

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE: Mechanical handling can cause the formation of dusts. To reduce the risk for dust explosion do not permit dust to accumulate. If permitted to accumulate, these fines or dust can, under certain conditions, pose an explosion hazard. Every effort should be made to prevent suspension, concentration or accumulation of fines or dusts in, or around, material handling systems. Product, as shipped, is not a combustible dust. To reduce the risk for dust explosion, do not permit dust to accumulate. Minimize dust levels by vacuuming rather than cleaning by the use of compressed air. Toxic and irritating fumes may be given off during burning.

ADVICE FOR FIREFIGHTERS: Dry chemical and CO2 are not generally recommended for large fires due to their lack of cooling capacity which may allow re-ignition. Do not use water jet. Persons exposed to products of combustion should wear an approved self contained breathing apparatus and full protective equipment.

Section 6. Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: No Information

ENVIRONMENTAL PRECAUTIONS: Do not discharge into sewer or waterways.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP: Spilled pellets may cause a slipping hazard. Sweep area as needed. Wear an approved dust respirator if necessary. (NIOSH, or EN143/EN149).

Section 7. Handling and Storage

PRECAUTIONS FOR SAFE HANDLING: Product, as shipped, is not a combustible dust. Mechanical handling can cause the formation of dusts. To reduce the risk for dust explosion do not permit dust to accumulate. If permitted to accumulate, these fines or dust can, under certain conditions, pose an explosion hazard. Every effort should be made to prevent suspension, concentration or accumulation of fines or dusts in, or around, material handling systems. Minimize dust levels by vacuuming rather than cleaning by the use of compressed air. Ground all material handling and transfer equipment to dissipate build-up of static electricity. Proper purging and shut down procedures should be followed to avoid overheating of this compound.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Store in a dry, sprinkler equipped warehouse.

Section 8. Exposure Controls/Personal Protection

Ingredients with Occupational Exposure Limits

No hazardous items exist

EXPOSURE CONTROLS

ENGINEERING CONTROLS: Use local exhaust to completely remove vapors and fumes generated during melt processing. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.

RESPIRATORY PROTECTION: An approved respirator is recommended for protection against processing fumes, or from dust generated from grinding, sanding, or sawing operations on molded parts. (NIOSH or EN143/149/14387).

SKIN PROTECTION: Canvas, cotton, or rubber gloves are recommended. Use heat resistant gloves when handling hot material.

EYE PROTECTION: Safety glasses with side shields are recommended.

OTHER PROTECTIVE EQUIPMENT: No Information

HYGIENIC PRACTICES: Eating, drinking and smoking in immediate work area should be prohibited.

Section 9. Physical and Chemical Properties

Appearance:	Granular / Pellet; White
Physical State:	Solid
Odor:	No Information available
Odor Threshold:	No Information available
pH:	Not applicable
Freeze Point, °C:	No Information available
Boiling Range, °C:	Not Applicable
Flash Point, °C:	No Information available
Evaporation Rate:	Not applicable
Combustibility:	No Information available
Explosive Limits, %:	No Information available
Vapor Pressure, mmHg:	Not applicable
Vapor Density:	Not applicable
Density, g/cm3:	1.1
Solubility in Water:	No Information available
Partition Coefficient, n-octanol/water:	Not applicable
Auto-Ignition Temperature, °C:	No Information available
Decomposition Temperature, °C:	No Information available
Viscosity:	Not applicable

Section 10. Stability and Reactivity

REACTIVITY: No Information

CHEMICAL STABILITY: Stable at recommended storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

CONDITIONS TO AVOID: Avoid temperatures above 300 °C (572 °F).

INCOMPATIBLE MATERIALS: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide. Styrene, hydrogen cyanide, hydrocarbons, acrylonitrile, acrolein, acetaldehyde, acetophenone, ethylbenzene, cumene, 4-vinylcyclohexene, phenols.

Section 11. Toxicological Information

INFORMATION ON TOXICOLOGICAL EFFECTS

CARCINOGENICITY:

None of the ingredients of this product are listed as a carcinogen by IARC, NTP, OSHA, MAK, or GHS.

SKIN CORROSION / IRRITATION: No Information

SERIOUS EYE DAMAGE / IRRITATION: No Information

RESPIRATORY OR SKIN SENSITIZATION: No Information

GERM CELL MUTAGENICITY: No Information

REPRODUCTIVE TOXICITY: No Information

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE: No Information

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE: No Information

ASPIRATION HAZARD: No Information

Practical Experiences

EFFECT OF OVEREXPOSURE - INHALATION: Processing fumes may cause irritation to the respiratory tract.

EFFECT OF OVEREXPOSURE - SKIN CONTACT: Pellets are not likely to cause irritation. Contact with molten material may cause thermal burns. Processing fumes may cause irritation.

EFFECT OF OVEREXPOSURE - EYE CONTACT: Processing fumes may cause irritation. Direct eye contact may cause irritation.

EFFECT OF OVEREXPOSURE - INGESTION: Not a probable route of exposure. Ingestion may cause gastric disturbances.

Section 12. Ecological Information

ECOLOGICAL INFORMATION: No specific ecological information is available. This material is considered to be non-biodegradable.

TOXICITY: No Information

PERSISTANCE AND DEGRADABILITY: No Information

BIOACCUMULATIVE POTENTIAL: No Information

MOBILITY IN SOIL: No Information

RESULTS OF PBT AND vPvB ASSESSMENT: No Information

OTHER ADVERSE EFFECTS: No Information

Section 13. Disposal Information

WASTE TREATMENT METHODS: The pellets, regrind, and purge of this material are non-hazardous and may be discarded in accordance with federal, state, and local regulations.
Do not discharge into sewer or waterways.

Section 14. Transport Information

Road Transport

UN Number:	-
UN Proper Shipping Name:	-
Transport Hazard Class:	Not Regulated
Packing Group:	-
ADR/RID Class:	Not Regulated

Sea Transport

IMDG Class:	Not Regulated
Marine Pollutant:	-

Air Transport

ICAO/IATA Class:	Not Regulated

ENVIRONMENTAL HAZARDS: No Information

SPECIAL TRANSPORT PRECAUTIONS: No Information

Section 15. Regulatory Information

U.S. Federal Regulations:

TSCA Inventory:

All ingredients are listed or exempt from listing on the TSCA 8b inventory.

CERCLA - SARA Hazard Category

Under the provisions of Title III, Sections 311/312 of Superfund Amendments and Reauthorizations Act (SARA) this product is classified into the hazards listed below:

None Known

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372:

No Sara 313 components exist in this product.

TSCA 12b:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(b) if exported from the United States:

No TSCA 12b components exist in this product.

CALIFORNIA PROPOSITION 65 CARCINOGENS

Warning: The following ingredients present in the product are known to the state of California to cause cancer. This information is based on our vendors' certificates, SDS's, or letters of compliance. However, RTP Company does not routinely analyze for these specific substances.

Chemical Name	CAS-No.
styrene	100-42-5
acrylonitrile	107-13-1

CALIFORNIA PROPOSITION 65 REPRODUCTIVE TOXINS

This product does not contain any ingredients that require a label or other type of warning under California Proposition 65 as known to cause birth defects or other reproductive harm. This information is based on our vendors' certificates, SDS's, or letters of compliance. However, RTP Company does not routinely analyze for these specific substances.

International Regulations: As follows -

CANADIAN WHMIS 2015:

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

EU REACH - SVHC (Substances of Very High Concern)

This product contains the following chemicals at a concentration above 0.1% that are on the Candidate List of Substances of Very High Concern (SVHC) published by the European Chemicals Agency (ECHA) — 27 June 2018.

https://echa.europa.eu/candidate-list-table

None known.

Section 16. Other Information

Revision Date: 07 Nov 2018

Supersedes Date: 22 Jan 2018

Datasheet produced by: Regulatory Department

Reason for revision: Statement(s) Changed
Substance and/or Product Properties Changed in Section(s) : 03

HMIS Ratings:

Health:	0
Flammability:	1
Reactivity:	0
Personal Protection:	N.I.

Method used for hazard classifications: Calculation method for mixtures.

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

Not applicable

Icons for GHS Pictograms shown in Section 3 describing each ingredient:

Not applicable

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined, N.I. - No Information

It is believed that the information contained herein is accurate as of the date hereof. HOWEVER, NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREIN AS TO THE INFORMATION PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS. The health and safety precautions contained herein may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. Nothing contained herein shall be construed as a license for the use of any product in a manner that would infringe existing patents.

US OSHA LABEL per 29 CFR §1910.1200(f)

RTP 699 X 119664 Z NS EC-27201 WHITE

Warning

May form combustible dust concentrations in air if small particles are generated during further processing, handling, machining, or by other means.

RTP Company
580 East Front Street
Winona, MN 55987 USA
www.rtpcompany.com
1-507-454-6900

Becton, Dickinson and Company
BD, Franklin Lakes, NJ 07417 USA
www.bd.com

Product name: 3 mL BD Luer-Lok™ Syringe sterile, single use
Product No.: 309603

Article Statement

This product is considered an “article” and does not require a Material Safety Data Sheet according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard or the EU REACH Regulation (EC) No 1907/2006. According to these agencies, an article is an item which is formed into a specific shape or design during manufacture and which does not release or otherwise result in exposure to a hazardous chemical under normal use.

To the best of our knowledge, the information contained herein is accurate. It is the responsibility of the user to use the article for the purpose for which it is intended and to exercise caution during use.