

SAFETY DATA SHEET

TPC 595

Section 1. Identification

GHS product identifier	TPC 595
Chemical name	Polyisobutylene
Other means of identification	Isobutene polymer; isobutylene polymer; isobutylene resin; polymerized 2-methylpropene; 2-methyl-1-propene, homopolymer; 1-propene,-2-methyl, homopolymer; polyisobutene; isobutylene homopolymer; Poly(2-methylpropene)
Product use	Tackifier, Viscosity Modifier, Insulator
Supplier's details	TPC Group One Allen Center, Suite 2000 Houston, TX, 77002, USA T 713-627-7474
e-mail address of person responsible for this SDS	www.tpcgrp.com
Emergency telephone number (with hours of operation)	800-424-9300 (Chemtrec - U.S.) +1-703-527-3887 (Chemtrec - International)

Section 2. Hazards identification

OSHA/HCS status	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Classification of the substance or mixture	Not classified.
<u>GHS label elements</u>	
Signal word	No signal word.
Hazard statements	No known significant effects or critical hazards.
<u>Precautionary statements</u>	
Prevention	Not applicable.
Response	Not applicable.
Storage	Not applicable.
Disposal	Not applicable.
Hazards not otherwise classified	Heated material can cause thermal burns.

Section 3. Composition/information on ingredients

Substance/mixture	Substance
Chemical name	Polyisobutylene
Other means of identification	Isobutene polymer; isobutylene polymer; isobutylene resin; polymerized 2-methylpropene; 2-methyl-1-propene, homopolymer; 1-propene,-2-methyl, homopolymer; polyisobutene; isobutylene homopolymer; Poly(2-methylpropene)
<u>CAS number/other identifiers</u>	
CAS number	9003-27-4
Product code	Not available.

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Polyisobutylene (PIB)	100	9003-27-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. In case of burns, immediately cool affected skin with cold water and continue for as long as possible or apply wet cloths to the area until medical attention can be obtained.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. In case of burns, immediately cool affected skin with cold water and continue for as long as possible or apply wet cloths to the area until medical attention can be obtained.
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	No known significant effects or critical hazards. Heated material can cause thermal burns.
Inhalation	No known significant effects or critical hazards.
Skin contact	Heated material can cause thermal burns.
Ingestion	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	Medical personnel may leave this material in place to minimize physical damage to the skin or cover the material with a burn gel to prevent adhesion of the dressing to the material.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media In case of fire, use water spray (fog), foam, dry chemical, CO₂ or sand.

Unsuitable extinguishing media Do not use water jet.

Specific hazards arising from the chemical

No specific fire or explosion hazard.

Hazardous thermal decomposition products

Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Use water spray or fog for cooling exposed containers.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. After product recovery, flush area with water.

Section 7. Handling and storage

Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Store and use away from heat, sparks, open flame or any other ignition source.

Section 7. Handling and storage

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Take precautionary measures against static discharges. Avoid all possible sources of ignition (spark or flame). Keep away from direct sunlight or strong incandescent light. Contact with oxygen should be minimized or eliminated (recommended: nitrogen blanket).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Polyisobutylene

None.

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Ensure an MSHA/NIOSH-approved respirator or equivalent is used.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid
Color	Clear. Bright.
Odor	Very faint. Characteristic.
Molecular weight	975 - 1175 g/mol
pH	Not available.
Melting point	Not available.
Boiling point	Not available.
Flash point	Open cup: >185°C (>365°F) [Cleveland Open Cup]
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Negligible.
Vapor density	Not available.
Relative density	0.87 to 0.90 [15.6°C (60.08°F)]
Solubility	Not miscible.
Partition coefficient n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Kinematic (100°C (212°F)): 175 to 210 cSt

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from incompatibles.
Incompatible materials	Strong acids Strong bases Strong oxidizing agents
Hazardous decomposition products	This material begins to decompose in air at around 250°C (482°F). Rapid depolymerization can occur in a fire and produce flammable vapors.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Polyisobutylene (PIB)	LC50 Inhalation Ousts and mists	Rat	>17.3 mg/l	4 hours
	LO50 Oermal	Rabbit	>3000 mg/kg	-
	LO50 Oral	Rat	>5 g/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Polyisobutylene	Eyes - Non-irritating to the eyes.	Rabbit	3.0 (w/w) (Primary irritation rate)	-	24, 48 and 72 hours
	Skin - Mild irritant	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	3.6 (Primary irritation score)	-	24, 48 and 72 hours

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Routes of entry anticipated: Oermal and Ocular

Potential acute health effects

Eye contact

No known significant effects or critical hazards. Heated material can cause thermal burns.

Inhalation

No known significant effects or critical hazards.

Skin contact

Heated material can cause thermal burns.

Ingestion

No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

No specific data.

Inhalation

No specific data.

Skin contact

No specific data.

Ingestion

No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects

Not available.

Potential delayed effects

Not available.

Section 11. Toxicological information

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

Not available.

General No known significant effects or critical hazards.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Polyisobutylene (PIB)	Acute LC50 >5600000 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any federal, state and regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	UN3257	UN3257	UN3257	UN3257	UN3257	UN3257
UN proper shipping name	Elevated temperature liquid, n.o.s. at or above 100°C and below its flash point (including molten metals, molten salts, etc.) (Polyisobutylene)	ELEVATEO TEMPERATURE LIQUIO, N.O.S. at or above 100 °C and below its flash point (including molten metals, molten salts, etc.) (Polyisobutylene)	ELEVATEO TEMPERATURE LIQUIO, N.O.S. at or above 100 °C and below its flash point (including molten metals, molten salts, etc.) (Polyisobutylene)	ELEVATEO TEMPERATURE LIQUIO, N.O.S. at or above 100 °C and below its flash-point (including molten metals, molten salts, etc.), filled at or below 190 °C (Polyisobutylene)	ELEVATEO TEMPERATURE LIQUIO, N.O.S. at or above 100°C and below its flashpoint (including molten metals, molten salts, etc.) (Polyisobutylene)	Elevated temperature liquid, n.o.s. at or above 100°C and below its flash point (including molten metals, molten salts, etc.) (Polyisobutylene)
Transport hazard class(es)	9	9	9	9	9	9
label						
Packing group	III	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	Marine Pollutant: No	No.
Additional information	<p>Packaging instruction</p> <p>Passenger aircraft Quantity limitation: Forbidden.</p> <p>Cargo aircraft Quantity limitation: Forbidden.</p> <p>Special provisions IB1, T3, TP3, TP29</p> <p>Packaging Exceptions None</p> <p>Packaging Non-bulk When shipped as non-bulk at <100°C material is not regulated.</p> <p>Packaging Bulk 247; When shipped as bulk at <100°C this</p>	<p>Product classified as per the following sections of the Transportation of Oangerous Goods Regulations: 2. 43-2.45 (Class 9).</p> <p>Explosive limit and limited Quantity Index 0</p> <p>Passenger Carrying Road or Rail Index Forbidden</p> <p>Remarks When shipped as bulk at <100°C this material is not regulated.</p>	<p>Special provisions 232, 274</p>	<p>Hazard identification number 99</p> <p>limited quantity 0</p> <p>Special provisions 274, 643</p> <p>Tunnel code (0)</p>	<p>Emergency schedules (EmS) F-A, _S-P_</p> <p>Special provisions 232, 274</p>	<p>Passenger and Cargo Aircraft Quantity limitation: Forbidden Packaging instructions: Forbidden</p> <p>Cargo Aircraft OnlyQuantity limitation: Forbidden Packaging instructions: Forbidden</p> <p>limited Quantities - Passenger Aircraft Quantity limitation: Forbidden Packaging instructions: Forbidden</p>
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						8/11

Section 14. Transport information

	material is not regulated.					
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Special precautions for user

Transport within user's premises always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOI and the IBC Code

Not available.

Section 15. Regulatory information

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted.

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)

Not listed

Clean Air Act Section 602 Class I Substances

Not listed

Clean Air Act Section 602 Class II Substances

Not listed

DEA list I Chemicals (Precursor Chemicals)

Not listed

DEA list II Chemicals (Essential Chemicals)

Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ

Not applicable.

SARA 311/312

Classification

Not applicable.

Composition/information on ingredients

No products were found.

State regulations

Massachusetts

This material is not listed.

New York

This material is not listed.

New Jersey

This material is not listed.

Pennsylvania

This material is not listed.

International regulations

Chemical Weapon Convention list Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Section 15. Regulatory information

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia	This material is listed or exempted.
Canada	This material is listed or exempted.
China	This material is listed or exempted.
Europe	Not determined.
Japan	Japan inventory (ENCS): This material is listed or exempted. Japan inventory (ISHI): Not determined.
Malaysia	Not determined.
New Zealand	This material is listed or exempted.
Philippines	This material is listed or exempted.
Republic of Korea	This material is listed or exempted.
Taiwan	This material is listed or exempted.
Turkey	Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	0
Flammability	1
Physical hazards	0

Caution HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Section 16. Other information

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Version 3

Key to abbreviations

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMOG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

References

Not available.

▣ Indicates information that has changed from previously issued version.

Notice to reader

Disclaimer Before using this product, the user is advised to make its own determination and assessment of the safety and suitability of the product for the specific use in question and is further advised against relying on the information contained in this document as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the product is suited and the information is applicable to the user's specific application. TPC Group does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, or allegedly arising from any usage of any trade or from any course of dealing in connection with the use of the information contained in this document or the product itself. TPC Group further makes no representations, and extends no warranties of any kind, that the use, sale, or other disposition of the product, whether alone or in combination with other products, will not infringe any patent, copyright, trademark, or other proprietary right. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with the use of the information contained herein or the product itself. Information contained in this document is given without reference to any intellectual property issues, as well as federal, state or local laws which may be encountered in the use of the information in this document or the product. Such questions should be investigated by the user.