

SAFETY DATA SHEET

TPC 545

Section 1. Identification

GHS product identifier	: TPC 545
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 1000 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.) +1-793-527-3887 (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.

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.

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 [Viscous]
Color	: Hazy.
Odor	: Turpentine like.
Molecular weight	: 300-600 g/mol
pH	: Not available.
Melting point	: Not available.
Boiling point	: 148.9 to 260°C (300 to 500°F)
Flash point	: Closed cup: >115°C (>239°F)
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: 4.5 [Air=1]
Relative density	: 0.75 to 0.9
Solubility	: Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.

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 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 Dusts and mists	Rat	>17.3 mg/l	4 hours
	LD50 Dermal	Rabbit	>3000 mg/kg	-
	LD50 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: Dermal 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)	ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100 °C and below its flash point (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)	ELEVATED TEMPERATURE LIQUID, 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)	ELEVATED TEMPERATURE LIQUID, 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 Dangerous 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 (D)</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 Only Quantity limitation: Forbidden Packaging instructions: Forbidden</p> <p>Limited Quantities - Passenger Aircraft Quantity limitation: Forbidden Packaging instructions: Forbidden</p>

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 MARPOL 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 (ISHL) : 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

Date of printing : 03/08/2017

Date of issue/Date of revision : 03/08/2017

Date of previous issue : 02/25/2017

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
 IMDG = 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

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