SAFETY DATA SHEET

P-TEC™ 8400, parts A & B

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier: P-TEC™ 8400

Product code: Not available

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use: Elastomeric compound (part A), hardener (part B)

Restriction on use: For industrial use only

1.3 Details of the supplier of the safety data sheet

Company: Polymères Technologies Inc
6330 boulevard Laurier Ouest
Saint-Hyacinthe (Québec)
Canada, J2S 9A7
1 866-799-3058

24-hour Emergency Phone number (CANUTEC): 1 888 226-8832

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

PART A

Serious eye irritation/damage – Category 2A

PART B

Skin sensitization – Category 1 Skin corrosion/irritation – Category 2

Serious eye irritation/damage – Category 2A

Specific target organ toxicity (single exposure, respiratory tract irritation) – Category 3

See toxicological information, section 11

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

PART A & B

Hazard pictograms

Signal word: WARNING

Hazard statement(s)

PART A

H319 Causes serious eye irritation.

PART B

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

Prevention statement(s)

PART A

P264	Wash hands thoroughly after handling.
P280	Wear eye or face protection.

PART B

P264	Wash hands thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves as well as eye or face protection.

Response statement(s)

PART A

P305+P338+P351	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P313+P337	If eye irritation persists, get medical attention.

PART B

P302+P352+P362+P364	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
P333+P313	If skin irritation or rash occurs, get medical attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P313+P337	If eye irritation persists, get medical attention.

Disposal:

PART A

Not applicable.

PART B

Dispose of contents/container in accordance with local / regional / national / international regulations.

2.3 Other hazards: No other effects shown.

3. Composition / information on ingredient(s)

3.1 Substances

Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Chemical noun	% (P/P)	CAS number
PART A		
Castor oil	**30 – 45**	8001-79-4
Silica amorphous, sublimed	**1 – 5**	112945-52-5
Titanium dioxide	**1 – 5**	13463-67-7
PART B		
4,4'-Methylenediphenyl Diisocyanate	**30 – 50**	101-68-8
Propanol, [(1-methyl-1, 2-ethanediyl)bis(oxy)]bis-, polymer with 1,1'-methylenebis [isocyanatobenzene]	**5 – 10**	103837-35-0
Methylenediphenyl diisocyanate	**10 – 20**	26447-40-5
O-(P-Isocyanatobenzyl)Phenyl Isocyanate	**10 – 30**	5873-54-1
2,2'-Methylenediphenyl Diisocyanate	**0.1 – 1**	2536-05-2

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.

4. First-aid measures

4.1 Description of 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. Continue to rinse for at least 20 minutes. Get medical attention.

Skin contact: Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. 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. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt, or waistband.

4.2 Most important symptoms and effects, both acute and delayed:

Potential acute effects on health

Eye contact: Causes serious eye irritation.
Inhalation: No known significant effect or critical hazard.
Skin contact: Causes skin irritation. May cause an allergic skin reaction.
Ingestion: No known significant effect or critical hazard.

Signs/symptoms of overexposure

Eye contact: Adverse symptoms may include pain, irritation, watering, and/or redness.
Inhalation: No known significant effect or critical hazard.
Skin contact: Adverse symptoms may include pain, irritation, watering, and/or redness.
Ingestion: No known significant effect or critical hazard.

5. Firefighting measures

5.1 Extinguishing media: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture: In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life. Firewater contaminated with this material must be contained and prevented from being discharged to any waterway, sewer, or drain.
Hazardous combustion products: Decomposition products may include carbon dioxide, carbon monoxide, nitrogen oxides, and metal oxides.

5.3 Advice for firefighters: 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. Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

6. Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures:

6.1.1 **For non-rescuers**
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.

6.1.2 **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-rescuers”.

6.2 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). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up: Stop the leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, watercourses, basements, or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with a non-combustible, absorbent material like 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.

6.4 Reference to other sections:

See section 1 for emergency contacts.

See section 8 to obtain information about appropriate individual protection equipment.

See section 13 for more information on waste treatment methods.

7. Handling and storage

7.1 Precautions for safe handling:

Protective measures

Do not get in eyes or on the skin, or even on clothing. Do not ingest. Avoid release to the environment. Keep in the original container or in an approved alternative made from a compatible material, being kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Workers should wash their hands and face before eating, drinking, and smoking. See also Section 8 for additional information on hygiene measures.

Advice on general occupational hygiene

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), food, and drink. Store locked up. Keep container tightly closed and sealed until ready for use.

7.2 Conditions for safe storage: 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. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s): Not available

8. Exposure controls / personal protection

8.1 Control parameters

National occupational exposure limit values

Ingredient name	Exposure limits
PART (A) Titanium dioxide ----------	**CA British Columbia Provincial (Canada, 7/2016).** TWA: 3 mg/m^3 8 hours. Form: Breathable dust TWA: 10 mg/m^3 8 hours. Form: Total dust **CA Alberta Provincial (Canada, 4/2009).** 8 hours OEL: 10 mg/m^3 8 hours. **CA Ontario Provincial (Canada, 7/2015).** TWA: 10 mg/m^3 8 hours.

	CA Quebec Provincial (Canada, 1/2014). TWAEV: 10 mg/m^3 8 hours. Form: Total dust **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 20 mg/m^3 15 minutes. TWA: 10 mg/m^3 8 hours.
PART (B) 4,4'-Methylenediphenyl Diisocyanate -------- Methylenediphenyl Diisocyanate ---------- O-(P-isocyanatobenzyl)Phenyl Isocyanate - 2,2'-Methylenediphenyl Diisocyanate -------- 	**CA Alberta Provincial (Canada, 4/2009).** 8 hours OEL: 0.005 ppm 8 hours. 8 hours OEL: 0.05 mg/m^3 8 hours. **CA British Columbia Provincial (Canada, 7/2016). Absorbed through skin. Skin sensitizer.** TWA: 0.005 ppm 8 hours. C: 0.01 ppm. **CA Quebec Provincial (Canada, 1/2014). Skin sensitizer.** TWAEV: 0.005 ppm 8 hours. TWAEV: 0.051 mg/m^3 8 hours. **CA Ontario Provincial (Canada, 7/2015).** TWA: 0.005 ppm 8 hours. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 0.015 ppm 15 minutes. TWA: 0.005 ppm 8 hours. **CA British Columbia Provincial (Canada, 7/2016).** TWA: 0.005 ppm 8 hours. C: 0.01 ppm. **CA Ontario Provincial (Canada, 7/2015).** C: 0.02 ppm. TWA: 0.005 ppm 8 hours. **CA British Columbia Provincial (Canada, 7/2016).** TWA: 0.005 ppm 8 hours. C: 0.01 ppm. **CA Ontario Provincial (Canada, 7/2015).** C: 0.02 ppm. TWA: 0.005 ppm 8 hours. **CA British Columbia (Canada, 7/2016).** TWA: 0.005 ppm 8 hours. C: 0.01 ppm. **CA Ontario Provincial (Canada, 7/2015).** C: 0.02 ppm. TWA: 0.005 ppm 8 hours.

8.2 Exposure controls: Not available.

Individual protection measures: Wash hands, forearms, and face thoroughly after handling chemical products, before eating and smoking, while 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.

Eyes: Chemical goggles or safety glasses with side shields are recommended.

Hands: Chemical-resistant gloves are recommended.

9. Physical and chemical properties

9.1 Basic physical and chemical properties

Physical state:	**PART (A)** **PART (B)**	Paste Paste
Color:	**PART (A)** **PART (B)**	Neutral or colored Straw yellow
Odor:	**PART (A)** **PART (B)**	None Slightly musty
Odor threshold: N/A		
pH:	**PART (A)** **PART (B)**	N/A N/A
Melting point:	**PART (A)** **PART (B)**	N/A < 0°C (< 32°F)
Boiling point:	**PART (A)** **PART (B)**	N/A 208°C (406.4°F)
Flashpoint:	**PART (A)** **PART (B)**	Closed cup: 282°C (539.6°F) Closed cup: > 200°C (> 392°F)
Evaporation rate:	**PART (A)** **PART (B)**	N/A N/A
Flammability (solid, gas): N/A		
Lower/upper explosive (flammable) limits:	**PART (A)** **PART (B)**	N/A N/A
Vapor pressure:	**PART (A)** **PART (B)**	N/A < 0.0000013 kPa (< 0.00001 mm Hg) [room temperature]
Vapor density:	**PART (A)** **PART (B)**	N/A 8.5 [air=1]
Relative density:	**PART (A)** **PART (B)**	0.88 0.88
Solubility: N/A		
Solubility in water: N/A		
Partition coefficient (n-octanol/water): N/A		
Self-ignition temperature:	**PART (A)** **PART (B)**	N/A > 400°C (> 752°F)
Decomposition temperature: N/A		
Viscosity: N/A		
Flow time (ISO 2431): N/A		

10. Stability and reactivity

10.1 Reactivity: No specific test data related to reactivity.

10.2 Chemical stability: The product is chemically stable under normal conditions of use.

10.3 Possibility of hazardous reactions: No dangerous or polymerization reactions will occur under normal conditions of use.

10.4 Conditions to avoid: No specific data.

10.5 Incompatible materials: Reactive or incompatible with oxidizing materials.

10.6 Hazardous decomposition products: No hazardous decomposition product should be produced under normal conditions of storage and use.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Ingredient name	Result	Species	Dose	Exposure
PART (A)				
Castor oil ----------	LD50 Oral	Rat	10 g/kg	-
Silica amorphous, sublimed ----------	LD50 Oral	Rat	3160 mg/kg	-
PART (B)				
4,4'-Methylenediphenyl Diisocyanate -----	LD50 Oral	Rat	9200 mg/kg	-

Irritation/corrosion

Ingredient name	Result	Species	Score	Exposure	Observation
PART (A)					
Castor oil ----------	Eyes – mild irritant	Rabbit	-	500mg	-
	Skin – mild irritant	Guinea pig	-	24 hours 100mg	-
	Skin – mild irritant	Rat	-	24 hours 100mg	-
PART (B)					
4,4'-Methylenediphenyl Diisocyanate -----	Eyes – moderate irritant	Rabbit	-	100mg	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Classification

Ingredient name	OSHA	IARC	NTP
PART (A)			
Silica amorphous, sublimed ----------	-	3	-
Titanium oxide ----------	-	2B	-
PART (B)			
4,4'-Methylenediphenyl Diisocyanate ----------	-	3	-

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Ingredient name	Category	Target organs
PART (A)		
Silica amorphous, sublimed ----------	Category 3	Respiratory tract irritation
PART (B)		
4,4'-Methylenediphenyl Diisocyanate ----------	Category 3	Respiratory tract irritation
Propanol, [(1-methyl-1, 2-ethanediyl)bis(oxy)]bis-, polymer with 1,1'-methylenebis [isocyanatobenzene] ----------	Category 3	Respiratory tract irritation
Methylenediphenyl diisocyanate ----------	Category 3	Respiratory tract irritation
O-(P-Isocyanatobenzyl)Phenyl Isocyanate ----------	Category 3	Respiratory tract irritation
2,2'-Methylenediphenyl Diisocyanate ----------	Category 3	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Ingredient name	Category	Target organs
PART (B)		
4,4'-Methylenediphenyl Diisocyanate ----------	Category 2	Not determined
Propanol, [(1-methyl-1, 2-ethanediyl)bis(oxy)]bis-, polymer with 1,1'-methylenebis [isocyanatobenzene] ----------	Category 2	Not determined
Methylenediphenyl diisocyanate ----------	Category 2	Not determined
O-(P-Isocyanatobenzyl)Phenyl Isocyanate ----------	Category 2	Not determined
2,2'-Methylenediphenyl Diisocyanate ----------	Category 2	Not determined

Aspiration hazard

There is no data available.

Information on the likely routes of exposure: Dermal contact, eye contact, inhalation, and ingestion. See section 4 for reviewing the potential acute effects on health.

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: Adverse symptoms may include pain, irritation, watering, and/or redness.

Inhalation: No known significant effect or critical hazard.

Skin contact: Adverse symptoms may include irritation or redness.

Ingestion: No known significant effect or critical hazard.

Delayed and immediate effects as well as chronic effects from short- and long-term exposure

Short-term exposure

Potential immediate effects: No known significant effect or critical hazard.

Potential delayed effects: No known significant effect or critical hazard.

Long-term exposure

Potential immediate effects: No known significant effect or critical hazard.

Potential delayed effects: No known significant effect or critical hazard.

Potential chronic effects on health

General: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: No known significant effect or critical hazard.

Mutagenicity: No known significant effect or critical hazard.

Teratogenicity: No known significant effect or critical hazard.

Developmental effects: No known significant effect or critical hazard.

Fertility effects: No known significant effect or critical hazard.

11.2 Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
PART (A) Oral	 69662.2 mg/kg

12. Ecological information

12.1 Aquatic toxicity

Ingredient name	Result	Species	Exposure
PART (A) Titanium oxide ------	 Acute LC50 3 mg/L Fresh water Acute LC50 6.5 mg/L Fresh water Acute LC50 >1000000 µg/L Marine water	 Crustaceans – Ceriodaphnia dubia – Neonate Daphnia – Daphnia pulex – Neonate Fish – Fundulus heteroclitus	 48 hours 48 hours 96 hours

12.2 Persistence and degradability: No data available

12.3 Bio-accumulation

Ingredient name	$LogP_{ow}$	BCF	Potential
PART (B)			
4,4'-Methylenediphenyl Diisocyanate ----------	4.51	200	Low
Methylenediphenyl Diisocyanate ----------	4.51	200	Low
O-(P-Isocyanatobenzyl)Phenyl Isocyanate ----------	4.51	200	Low
2,2'-Methylenediphenyl Diisocyanate ----------	5.22	200	Low

12.4 Mobility in soil: Not available

12.5 Results of PBT and vPvB assessment: Not available

12.6 Other adverse effects: No known significant effect or critical hazard.

13. Disposal considerations

13.1 Waste treatment methods: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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 regional local authority requirements.

14. Transport information

	TDG	DOT	IMDG	IATA
14.1 UN number	Not regulated			
14.2 Proper shipping name	N/A			
14.3 Transport hazard class(es)	N/A			
14.4 Packing group	N/A			

Transport in bulk *(according to Annex II of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), and the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code)):* N/A

14.5 Environmental hazards: No

ADR: The identification of marine pollutant is not required for transport by ground.

IMDG: Emergency schedules F-A, S-P

Emergency Response Guidebook (ERG): 171

14.6 Special precautions for users: Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC code: Not applicable

15. Regulatory information

15.1 Canadian lists

Canada inventory (DSL NDSL): At least one component is not listed in DSL, but all such components are listed in NDSL.

Canadian NPRI: The component 4,4'-Methylenediphenyl Diisocyanate is listed.

CEPA Toxic substances: None of the components are listed.

15.2 Chemical safety assessment: Not available

16. Other information

Classification	Category	Justification
PART (A) Serious eye damage/eye irritation	Category 2A	Calculation
PART (B) Skin corrosion/irritation Serious eye damage/eye irritation Skin sensitization Specific target organ toxicity (single exposure, respiratory tract irritation)	 Category 2 Category 2A Category 1 Category 3	 Calculation Calculation Calculation Calculation

Abbreviations and acronyms

ATE= Acute Toxicity Estimate
BCF= Bioconcentration Factor
CEPA= Canadian Environmental Protection Act
DSL= Domestic Substances List
IATA= International Air Transport Association
IBC= Intermediate Bulk Container
IMDG= International Maritime Dangerous Goods
$LogP_{ow}$= Logarithm of the n-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)
NDSL= Non-Domestic Substances List
PBT= Persistent, Bio-accumulative, and Toxic
vPvB= Very Persistent and Very Bio-accumulative

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.