

## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

**1.1 Product Identifier:** PT Flex 20 Liquid Rubber Part A  
PT Flex 50 Liquid Rubber Part A  
PT Flex 60 Liquid Rubber Part A  
PT Flex 70 Liquid Rubber Part A  
PT Flex 85 Liquid Rubber Part A

Product Code(s): PTFLEX20A, PTFLEX50A, PTFLEX60A, PTFLEX70A, PTFLEX85A

**1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:** Component for Polyurethane Casting/Mold Rubber. For Industrial/Professional Use only. Do not use in toys or childcare articles that can be placed in the mouth.

### 1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer: Polytek Development Corp.  
55 Hilton St., Easton, PA 18042 USA  
Phone: 610-559-8620 (9 a.m. to 5 p.m. EST)  
E-mail: [sds@polytek.com](mailto:sds@polytek.com)

EU OR: Stewardship Solutions  
Green Lowe Farm, Shawclough Rd  
Waterfoot, Rossendale, Lancs. BB4 9SA, UK  
Phone: (+44) 01706 220901

**1.4 Emergency Telephone Number:** CHEMTREC 800-424-9300 or 001-703-527-3887

## Section 2: Hazards Identification

### 2.1 Classification of the Substance or Mixture:

**CLP/GHS (No 1272/2008):** Acute Toxicity - Inhalation Category 4 (H332)  
Skin Irritation Category 2 (H315)  
Eye Irritation Category 2 (H319)  
Respiratory Sensitization Category 1 (H334)  
Skin Sensitization Category 1 (H317)  
Carcinogenicity Category 2 (H351)  
Specific Target Organ Toxicity Single Exposure Category 3 (H335)  
Specific Target Organ Toxicity Repeated Exposure Category 2 (H373)

**2.2 Label Elements:** Danger



Contains Isocyanates

#### Hazard Phrases

H332 Harmful if inhaled.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.  
H373 May cause damage to lungs and respiratory system through prolonged or repeated exposure.

#### Precautionary Phrases

P201 Obtain special instructions before use.  
P280 Wear protective gloves, protective clothing, eye protection, and face protection.  
P260 Do not breathe vapours/mists/spray.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P362+364 Take off contaminated clothing and wash before reuse.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

- P308+P313 IF exposed or concerned: Get medical attention.  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P501 Dispose of contents and container in accordance with local, regional and national regulations.

**Supplemental Information:** This is one part of a two-part system. Read and understand the hazard information on Part B before using.

**2.3 Other Hazards:** No additional information available.

### Section 3: Composition/Information on Ingredients

#### 3.2 Mixtures

Chemical Name	Identifier	CLP Classification	%
Polymeric methylenediphenyl diisocyanate (MDI) (Include isomers and oligomers.)	CAS 9016-87-9	Acute Toxicity – Inhalation Cat 4 (H332) Skin Irritation Cat 2 (H315) Eye Irritation Cat 2 (H319) Resp Sensitization Cat 1 (H334) Skin Sensitization Cat 1 (H317) Carcinogenicity Cat 2 (H351) STOT SE Cat 3 (H335) STOT RE Cat 2 (H373)	30-50
Other ingredients are not classified as health and/or environmental hazards, and/or are present below cut-off/concentration limits.			

### Section 4: First-Aid Measures

#### 4.1 Description of First Aid Measures

**Eye:** Rinse thoroughly with water for at least 15 minutes, holding the eyelids open to be sure the material is washed out. Get prompt medical attention.

**Skin:** Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation or symptoms of exposure develop. Launder clothing before re-use. Discard items that cannot be decontaminated.

**Inhalation:** Remove person to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

**Ingestion:** Do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

**4.2 Most Important symptoms and effects, both acute and delayed:** Causes skin and eye irritation. Vapours or mists may cause respiratory irritation. May cause allergic skin and/or respiratory reaction in sensitized persons. Symptoms include skin rash, wheezing, shortness of breath and other asthma symptoms. Prolonged inhalation overexposure may damage the lungs and respiratory system.

**4.3 Indication of any immediate medical attention and special treatment needed:** Immediate medical attention is required for asthmatic symptoms or serious inhalation exposures. Respiratory symptoms, including pulmonary edema may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Persons sensitized to Diisocyanates should consult a physician regarding working with respiratory irritants or sensitizers.

### Section 5: Fire-Fighting Measures

**5.1 Extinguishing Media:** Use water fog, foam, carbon dioxide or dry chemical. Do not use solid water stream. Solid stream of water into hot product may cause violent steam generation or eruption.

#### 5.2 Special Hazards Arising from the Substance or Mixture

**Unusual Fire and Explosion Hazards:** Not classified as flammable or combustible. Product will burn under fire conditions.

**Combustion Products:** Oxides of carbon and nitrogen, isocyanates, hydrogen cyanide, dense smoke.

**5.3 Advice for Fire-Fighters:** Wear an approved, positive pressure, self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water.

### Section 6: Accidental Release Measures

**6.1 Personal Precautions, Protective Equipment and Emergency Procedures:** Remove all ignition sources. Clear non-emergency personnel from the area. Wear appropriate protective clothing to avoid eye and skin contact and avoid breathing of vapours. Ventilate area. Caution – spill area may be slippery.

**6.2 Environmental Precautions:** Avoid release to the environment. Report spills and releases as required to appropriate authorities.

**6.3 Methods and Material for Containment and Cleaning Up:** Cover with an inert absorbent material and collect into an appropriate container for disposal. Do not seal the container since CO<sub>2</sub> is generated on contact with moisture and dangerous pressure buildup can occur. Decontaminate floor area with a mixture of water plus isopropyl alcohol (20%), household ammonia (10%), and detergent (2%).

**6.4 Reference to Other Sections:** Refer to Section 8 for protective clothing and Section 13 for disposal.

### Section 7: Handling and Storage

- 7.1 Precautions for Safe Handling:** Avoid breathing vapours, aerosols and mists. Use with adequate ventilation. Avoid contact with the eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep container closed when not in use.
- 7.2 Conditions for Safe Storage, Including any Incompatibilities:** Store indoors at temperatures between 12 and 35°C (55 and 95°F). Store in original, unopened containers. Protect from atmospheric moisture and water since MDI reacts with water to form CO<sub>2</sub> leading to potentially dangerous pressure build up in sealed containers.
- 7.3 Specific end use(s):** None identified

### Section 8: Exposure Controls/Personal Protection

**8.1 Control Parameters:**

**Occupational Exposure Limits:**

Chemical Name	Exposure Limits
Methylenediphenyl Diisocyanate (MDI)	0.02 mg/m <sup>3</sup> TWA; 0.07 mg/m <sup>3</sup> STEL SEN UK WEL 0.05 mg/m <sup>3</sup> (inhalable aerosol) TWA and STEL DFG MAK 0.1 mg/m <sup>3</sup> TWA; 0.2 mg/m <sup>3</sup> France OEL 0.052 mg/m <sup>3</sup> TWA Belgium OEL

**Biological Exposure Index:** None Established

**Derived No Effect Level (DNEL):** None Established

**Predicted No Effect Concentration (PNEC):** None Established

**8.2 Exposure Controls:**

**Ventilation:** Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

**Respiratory Protection:** If needed, an approved respirator with organic vapour cartridges may be used. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.

**Skin Protection:** Wear impervious gloves, such as butyl rubber or nitrile rubber.

**Eye Protection:** Wear chemical safety goggles.

**Other Protective Equipment:** Wear impervious clothing to prevent skin contact and contamination of personal clothing. An eye wash facility and washing facility should be available in the work area.

### Section 9: Physical and Chemical Properties

**9.1 Information on basic Physical and Chemical Properties**

**Appearance:** Clear, yellow/amber liquid

**Odour:** Slightly musty

**Odour Threshold:** 0.4 ppm (MDI)

**pH:** Not applicable

**Melting Point/Freezing Point:** No data available

**Boiling Point:** No data available

**Flash Point:** >200°C (392°F)

**Evaporation Rate:** No data available

**Flammability (solid, gas):** Not applicable

**Flammable Limits:** No data available

**Vapour Pressure:** <0.0009 hPa (<0.0007 mmHg) @ 20°C (MDI)

**Vapour Density:** >1 (air = 1)

**Relative Density:** 1.0-1.1 @ 25°C

**Solubility:** Insoluble in water

**Partition Coefficient: n-Octanol/Water:** Reacts with water

**Autoignition Temperature:** No data available

**Decomposition Temperature:** No data available

**Viscosity:** 300-2,500 cP @ 25°C

**Explosive Properties:** Not explosive

**Oxidizing Properties:** Not oxidizing

**9.2 Other Information:** None available

### Section 10: Stability and Reactivity

**10.1 Reactivity:** Diisocyanates react with many materials and the rate of reaction increases with temperature. Reaction with water generates carbon dioxide and heat.

**10.2 Chemical Stability:** Stable under recommended conditions.

**10.3 Possibility of Hazardous Reactions:** Elevated temperatures can cause hazardous polymerization. Polymerization can be catalyzed by strong bases or water. Reaction with water generates carbon dioxide, and results in heat and pressure buildup in closed systems.

**10.4 Conditions to Avoid:** Avoid moisture and temperatures below 12 and above 35°C (55-95°F) to protect product integrity.

- 10.5 Incompatible Materials:** Avoid contact with water, acids, bases, alcohols, strong oxidizers, and some metals (e.g., aluminum, zinc, brass, tin copper).
- 10.6 Hazardous Decomposition Products:** Depends on temperature, air supply and presence of other materials (potentially isocyanate vapour, carbon monoxide, nitrogen oxides, and traces of hydrogen cyanide). Gases are released during decomposition.

## Section 11: Toxicological Information

### 11.1 Information on Toxicological Effects:

#### Potential Health Effects:

**Eye Contact:** Causes serious irritation. May cause temporary corneal injury.

**Skin Contact:** Causes skin irritation. May stain skin. Repeated skin contact may cause an allergic skin reaction. Animal studies indicate that skin contact with isocyanates may affect potential respiratory sensitization.

**Inhalation:** May cause respiratory irritation. At room temperature, vapours are minimal due to low volatility. Vapours or aerosols (e.g., generated during heating or spraying) may cause respiratory irritation and possibly pulmonary edema. May cause respiratory sensitization. For individuals sensitized to MDI, exposure may result in allergic respiratory reactions (e.g., coughing, wheezing, difficulty breathing).

**Ingestion:** Single oral dose toxicity is low. No harmful effects anticipated from ingesting small amounts incidental to normal handling. Large amounts may cause gastrointestinal effects.

**Chronic Health Effects:** Repeated or prolonged exposure to isocyanates above exposure limits may cause an allergic sensitization of the respiratory tract causing an asthma-like response upon re-exposure. Repeated overexposure to isocyanates has been associated with decreased lung function. Repeated or prolonged dermal contact with this product may cause allergic skin sensitization in some individuals.

**Acute Toxicity Values:** MDI: Oral rat LD50 >10,000 mg/kg; Skin rabbit LD50 >9,400 mg/kg; Inhalation rat LC50 0.49 mg/L/4 hr (aerosol)

**Skin Corrosion/Irritation:** Irritating to the skin.

**Eye Damage/Irritation:** Irritating to the eyes.

**Respiratory Irritation:** Vapours and mists are irritating to respiratory system.

**Respiratory Sensitization:** Isocyanates are respiratory sensitizers.

**Skin Sensitization:** Isocyanates are skin sensitizers.

**Germ Cell Mutagenicity:** Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Carcinogenicity:** Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Reproductive Toxicity:** In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

#### Specific Target Organ Toxicity:

Single Exposure: May cause respiratory irritation.

Repeat Exposure: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

## Section 12: Ecological Information

**12.1 Toxicity:** Not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 >100 mg/L in most sensitive species).

**12.2 Persistence and Degradability:** Not readily biodegradable.

**12.3 Bioaccumulative Potential:** Not expected to bioaccumulate.

**12.4 Mobility in Soil:** In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**12.5 Results of PBT and vPvB Assessment:** Not considered to be PBT.

**12.6 Other Adverse Effects:** Not applicable

## Section 13: Disposal Considerations

**13.1 Waste Treatment Methods:** Dispose in accordance with all local, state and federal regulations. Upon exposure to moisture, product forms an inert, non-hazardous solid.

**Section 14: Transport Information**

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Transport Hazard Class(es)	14.4 Packing Group	14.5 Environmental Hazards
US DOT	None	Not Regulated	None	None	No
Canadian TDG	None	Not Regulated	None	None	No
EU ADR/RID	None	Not Regulated	None	None	No
IMDG	None	Not Regulated	None	None	No
IATA/ICAO	None	Not Regulated	None	None	No

**14.6 Special Precautions for User:** Not applicable

**14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

**Section 15: Regulatory Information**

**15.1 Safety, Health and Environment Regulations/Legislation Specific for the Substance or Mixture:**

**REACH:** Substances in this formulation imported to EU in >1 tonne/yr are pre-registered.

**REACH Restriction:** These products do not contain SVHCs. May contain a plasticizer that is restricted from being used in toys and childcare articles that can be placed in the mouth (2005/84/EC).

**International Inventories:** To be determined.

**15.2 Chemical Safety Assessment:** A Chemical Safety Assessment has not been conducted.

**Section 16: Other Information**

**GHS Classification for Reference (See Sections 2 and 3):**

- Acute Tox Cat 4      Acute Inhalation Toxicity Category 4
- Skin Irrit Cat 2      Skin Irritation Category 2
- Eye Irrit Cat 2      Eye Irritation Category 2
- Resp Sens Cat 1      Respiratory Sensitization Category 1
- Skin Sens Cat 1      Skin Sensitization Category 1
- Carc Cat 2            Carcinogenicity Category 2
- STOT SE Cat 3        Specific Target Organ Toxicity Single Exposure Category 3 (respiratory irritation)
- STOT RE Cat 2        Specific Target Organ Toxicity Repeated Exposure Category 2
- H315                  Causes skin irritation.
- H317                  May cause an allergic skin reaction.
- H319                  Causes serious eye irritation.
- H332                  Harmful if inhaled.
- H334                  May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335                  May cause respiratory irritation.
- H351                  Suspected of causing cancer.
- H373                  May cause damage to lungs and respiratory system through prolonged or repeated exposure.

**EU Classes and Risk Phrases for Reference (See Sections 2 and 3):**

- R20                    Harmful by inhalation.
- R36/37/38            Irritating to eyes, respiratory system and skin.
- R40                    Limited evidence of a carcinogenic effect.
- R42/43                May cause sensitization by inhalation and skin contact.
- R48/20                Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**Training Advice:** All personnel using/handling this product should be trained in proper chemical handling and the need for and use of engineering controls and protective equipment.

**SDS Revision Note:** First EU-version SDS for these products: 07-July-2015.

**Disclaimer:** The information contained herein is considered accurate; however, Polytek makes no warranty regarding the accuracy of the information. The user must determine the suitability of the product for the intended use and accepts all risk and liability associated with that use.