SECTION 1: Identification

1.1 Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>TPU 90A</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number</td>
<td>not relevant (mixture)</td>
</tr>
</tbody>
</table>

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

Relevant identified uses: Filament

1.3 Details of the supplier of the safety data sheet

Jabil Inc.
102 N Jonathan Blvd
55318 Chaska, Minnesota
United States
Telephone: 612 225-2692

E-mail (competent person): GHS@crc-us.com

1.4 Emergency telephone number

<table>
<thead>
<tr>
<th>Poison center</th>
<th>Name</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>CHEMTREC USA</td>
<td>(800) 424-9300</td>
</tr>
<tr>
<td></td>
<td>CHEMTREC (International)</td>
<td>+1 202-483-7616</td>
</tr>
</tbody>
</table>

As above or next toxicological information centre.

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
This mixture does not meet the criteria for classification.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
not required

2.3 Other hazards

Static discharges.
Molten material may cause thermal burns.
Results of PBT and vPvB assessment
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances
not relevant (mixture)

3.2 Mixtures
Description of the mixture
Thermoplastic polyurethane.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation
Provide fresh air.
After inhalation of decomposition products, remove the affected person to a source of fresh air and keep calm.

Following skin contact
Wash with plenty of soap and water.
After contact with the molten product, cool rapidly with cold water.
Do not pull solidified product away from the skin.

Following eye contact
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Following ingestion
Rinse mouth. Do not induce vomiting.
Get medical advice/attention if you feel unwell.

Notes for the doctor
none

4.2 Most important symptoms and effects, both acute and delayed
These information are not available.

4.3 Indication of any immediate medical attention and special treatment needed
none
SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
water, foam, alcohol resistant foam, fire extinguishing powder, co-ordinate firefighting measures to the fire surroundings

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.
Deposited combustible dust has considerable explosion potential.

Hazardous combustion products
nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2), hydrogen cyanide (HCN, prussic acid), hydrocarbons

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Co-ordinate firefighting measures to the fire surroundings.
Do not allow firefighting water to enter drains or water courses.
Collect contaminated firefighting water separately.
Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters
self-contained protective suits against fire, self-contained breathing apparatus (SCBA)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Ventilate affected area.
Control of dust.
Eliminate all ignition sources if safe to do so.
Do not breathe dust.
Avoid contact with skin and eyes.
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders
Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.
Retain contaminated washing water and dispose of it.
6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill
take up mechanically

Advices on how to clean up a spill
Take up mechanically.
Collect spillage.

Other information relating to spills and releases
Place in appropriate containers for disposal.
Ventilate affected area.

6.4 Reference to other sections
Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation
Use local and general ventilation.
Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharge.

Specific notes/details
Dust deposits may accumulate on all deposition surfaces in a technical room.

Measures to protect the environment
Avoid release to the environment.

Advice on general occupational hygiene
Do not eat, drink and smoke in work areas.
Remove contaminated clothing and protective equipment before entering eating areas.
Do not breathe dust.
Avoid contact with skin and eyes.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.

7.2 Conditions for safe storage, including any incompatibilities

Explosive atmospheres
Removal of dust deposits.

Flammability hazards
Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharge.
Incompatible substances or mixtures
Incompatible materials: see section 10.

Protect against external exposure, such as
heat, direct light irradiation, sunlight

Consideration of other advice
Keep away from food, drink and animal feedingstuffs.
Store in a dry place. Store in a closed container.
Store in a well-ventilated place. Keep cool.

Ventilation requirements
Provision of sufficient ventilation.

Packaging compatibilities
Keep only in original container.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Identifier</th>
<th>TWA [ppm]</th>
<th>TWA [mg/m³]</th>
<th>STEL [tpm]</th>
<th>STEL [mg/m³]</th>
<th>Notation</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>Particulates not otherwise regulated</td>
<td>PEL (CA)</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cal/OSHA PEL</td>
</tr>
<tr>
<td>US</td>
<td>Particulates not otherwise regulated</td>
<td>PEL (CA)</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>r</td>
<td>Cal/OSHA PEL</td>
</tr>
<tr>
<td>US</td>
<td>particulates not otherwise classified</td>
<td>REL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>appx-D</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>US</td>
<td>particulates not otherwise classified (PNOC)</td>
<td>PEL</td>
<td>1,766</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td>i, dust</td>
<td>29 CFR 1910.1000</td>
</tr>
<tr>
<td>US</td>
<td>particulates not otherwise classified (PNOC)</td>
<td>PEL</td>
<td>529.5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>parml, r, dust</td>
<td>29 CFR 1910.1000</td>
</tr>
</tbody>
</table>

Notation
appx-D see Appendix D - Substances with No Established RELs
dust as dust
i inhalable fraction
parml particles/ml
Notation

- **r**: respirable fraction
- **STEL**: short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
- **TWA**: time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

### 8.2 Exposure controls

**Appropriate engineering controls**

General ventilation.

**Individual protection measures (personal protective equipment)**

**Eye/face protection**

Wear eye/face protection.

**Hand protection**

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

In the case of wanting to use the gloves again, clean them before taking off and air them well.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Use heat resistant gloves when handling hot / molten product.

**Other protection measures**

Wear heat-resistant protective clothing when handling hot/molten product.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

Particulate filter device (EN 143).

**Environmental exposure controls**

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>solid</td>
</tr>
<tr>
<td>Form</td>
<td>Filament</td>
</tr>
<tr>
<td>Color</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Odor</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>
Other safety parameters

pH (value) these information are not available
Melting point/freezing point these information are not available
Initial boiling point and boiling range these information are not available
Flash point not applicable
Evaporation rate these information are not available
Flammability (solid, gas) this material is combustible, but will not ignite readily
Explosion limits of dust clouds not determined
Vapor pressure these information are not available
Density these information are not available
Vapor density these information are not available
Relative density these information are not available

Solubility(ies)

Water solubility these information are not available

Partition coefficient

n-octanol/water (log KOW) these information are not available
Auto-ignition temperature not relevant (Solid matter)

Decomposition temperature these information are not available

Viscosity

Kinematic viscosity not relevant (solid matter)
Dynamic viscosity not relevant (solid matter)
Explosive properties not explosive
Oxidizing properties shall not be classified as oxidizing

9.2 Other information

None
SECTION 10: Stability and reactivity

10.1 Reactivity
This material is not reactive under normal ambient conditions.

10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
No known hazardous reactions.

10.4 Conditions to avoid
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.5 Incompatible materials
oxidizers

10.6 Hazardous decomposition products
Hydrocarbons.
Pyrolysis products, toxic.
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification procedure
If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
This mixture does not meet the criteria for classification.

Acute toxicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Skin corrosion/irritation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Serious eye damage/eye irritation
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.
Respiratory or skin sensitization

Skin sensitization
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Respiratory sensitization
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

IARC Monographs
None of the ingredients are listed.

National Toxicology Program (United States)
None of the ingredients are listed.

OSHA Carcinogens
None of the ingredients are listed.

Reproductive toxicity
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure
Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)
Test data are not available for the complete mixture.

Aquatic toxicity (chronic)
Test data are not available for the complete mixture.
12.2 Persistence and degradability
   Biodegradation
   Data are not available.
   Persistence
   Data are not available.

12.3 Bioaccumulative potential
   Data are not available.

12.4 Mobility in soil
   Data are not available.

12.5 Results of PBT and vPvB assessment
   This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects
   Data are not available.
   Endocrine disrupting potential
   None of the ingredients are listed.
   Remarks
   Wassergefährdungsklasse, WGK (water hazard class): 1

SECTION 13: Disposal considerations

13.1 Waste treatment methods
   Dispose of contents/container in accordance with local/regional/national/international regulations.
   Sewage disposal-relevant information
   Do not empty into drains.
   Waste treatment of containers/packages
   Handle contaminated packages in the same way as the substance itself.
   Remarks
   Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number
   Not subject to transport regulations.
14.2 UN proper shipping name
   -
14.3 Transport hazard class(es)
   Class
   -
14.4 Packing group
   -
14.5 Environmental hazards
non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user
There is no additional information.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations
Transport of dangerous goods by road or rail (49 CFR US DOT)
Not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG)
Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)
Not subject to ICAO-IATA.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)
Superfund Amendment and Reauthorization Act (SARA TITLE III )
The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)
none of the ingredients are listed

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Remarks</th>
<th>Statutory code</th>
<th>Final RQ pounds (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorobenzene</td>
<td>108-90-7</td>
<td></td>
<td>1 2 3 4</td>
<td>100 (45,4)</td>
</tr>
</tbody>
</table>

Legend
1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act
2 "2" indicates that the source is section 307(a) of the Clean Water Act
3 "3" indicates that the source is section 112 of the Clean Air Act
4 "4" indicates that the source is section 3001 of the Resource Conservation and Recovery Act (RCRA)
Clean Air Act
none of the ingredients are listed

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987
none of the ingredients are listed

Industry or sector specific available guidance(s)

NPCA-HMIS® III

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic</td>
<td>/</td>
<td>none</td>
</tr>
<tr>
<td>Health</td>
<td>0</td>
<td>no significant risk to health</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
<td>material that must be preheated before ignition can occur</td>
</tr>
<tr>
<td>Physical hazard</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive</td>
</tr>
<tr>
<td>Personal protection</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

NFPA® 704

<table>
<thead>
<tr>
<th>Category</th>
<th>Degree of hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
<td>material that must be preheated before ignition can occur</td>
</tr>
<tr>
<td>Health</td>
<td>0</td>
<td>material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material</td>
</tr>
<tr>
<td>Instability</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions</td>
</tr>
<tr>
<td>Special hazard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15.2 Chemical Safety Assessment
No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information, including date of preparation or last revision
Date of preparation: 2018-12-19
### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 CFR</td>
<td>29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazard-</td>
</tr>
<tr>
<td>1910.1000</td>
<td>ous Substances (permissible exposure limits)</td>
</tr>
<tr>
<td>49 CFR US DOT</td>
<td>49 CFR § 40 U.S. Department of Transportation</td>
</tr>
<tr>
<td>Cal/OSHA PEL</td>
<td>California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical sub-</td>
</tr>
<tr>
<td></td>
<td>stances)</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>IARC Mono-</td>
<td>IARC Monographs on the Evaluation of Carcinogenic Risks to Humans</td>
</tr>
<tr>
<td>graphs</td>
<td></td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NIOSH REL</td>
<td>National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELS)</td>
</tr>
<tr>
<td>NPCA-HMIS®</td>
<td>National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III,</td>
</tr>
<tr>
<td>III</td>
<td>Third Edition</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration (United States)</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible exposure limit</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts per million</td>
</tr>
<tr>
<td>STEL</td>
<td>Short-term exposure limit</td>
</tr>
<tr>
<td>TWA</td>
<td>Time-weighted average</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

### Key literature references and sources for data

Transport of dangerous goods by road or rail (49 CFR US DOT).
International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

### Classification procedure

Physical and chemical properties.
Health hazards.
Environmental hazards.
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

**Responsible for the safety data sheet**

Chemical Regulatory Compliance Company  Telephone: +1 (630) 410-1660  
Chicago, IL  e-Mail: GHS@crc-us.com  
USA  Website: www.crc-us.com

**Disclaimer**

This information is based upon the present state of our knowledge.  
This SDS has been compiled and is solely intended for this product.