

SAFETY DATA SHEET

North American Version

TORLON® 4301

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Identification of the substance/preparation

Product name : TORLON® 4301

1.2. Use of the Substance/Preparation

Recommended use : - For further information, please contact: Supplier

1.3. Company/Undertaking Identification

Address : SOLVAY ADVANCED POLYMERS, LLC
4500 McGINNIS FERRY ROAD
USA- 30005-3914 ALPHARETTA

1.4. Emergency and contact telephone numbers

Emergency telephone number : 1 (800) 621-4590 [Health Information]
1 (800) 424-9300 CHEMTREC (USA)
1 (800) 621-4557 [Other Product Information]
1 (770) 772-8880

2. HAZARDS IDENTIFICATION

2.1. Emergency Overview:

General Information

Appearance : pellets
Colour : black
Odour : odourless

Main effects

- Product dust may be irritating to eyes, skin and respiratory system.
- Hazardous decomposition products formed under fire conditions.

2.2. Potential Health Effects:

Inhalation

- Mechanical irritation from the particulates generated by the product.
- Thermal decomposition can lead to release of hazardous gases and vapors

Eye contact

- Mechanical irritation from the particulates generated by the product.

Skin contact

- Mechanical irritation from the particulates generated by the product.

Ingestion

- Low ingestion hazard.

Other toxicity effects

- See section 11: Toxicological Information

2.3. Environmental Effects:

- See section 12: Ecological Information



3. COMPOSITION/INFORMATION ON INGREDIENTS

Poly(amide-imide) polymer

CAS-No. : Proprietary
Concentration : $\geq 82.00 - \leq 92.00$ %

Graphite (natural)

CAS-No. : 7782-42-5
Concentration : $\geq 7.00 - \leq 13.00$ %

Polytetrafluoroethylene

CAS-No. : 9002-84-0
Concentration : $\geq 1.00 - \leq 3.00$ %

4. FIRST AID MEASURES

4.1. Inhalation

- Remove to fresh air.
- Call a physician immediately.
- Hazardous decomposition products
- Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.

4.2. Eye contact

- Flush eyes with running water for several minutes, while keeping the eyelids wide open.
- If eye irritation persists, consult a specialist.

4.3. Skin contact

- Cool skin rapidly with cold water after contact with hot polymer.
- Do not peel polymer from the skin.
- Obtain medical attention.

4.4. Ingestion

- Never give anything by mouth to an unconscious person.
- If a large amount is swallowed, get medical attention.

5. FIRE-FIGHTING MEASURES

5.1. Suitable extinguishing media

- powder
- Foam
- Water
- Water spray
- Carbon dioxide (CO₂)

5.2. Extinguishing media which must not be used for safety reasons

- None.

5.3. Special exposure hazards in a fire

- Combustible material
- In a fire, the polymer melts, producing droplets which may propagate fire.
- Once started, a fire will tend to self extinguish (see section 9).
- Risk of dust explosion.
- Heating can release hazardous gases.

5.4. Special protective equipment for fire-fighters

- In the event of fire, wear self-contained breathing apparatus.
- Fire fighters must wear fire resistant personnel protective equipment.



5.5. Other information

- Avoid dust formation.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

- Sweep up to prevent slipping hazard.
- Avoid dust formation.
- Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

- Should not be released into the environment.
- The product should not be allowed to enter drains, water courses or the soil.
- In case of accidental release or spill, immediately notify the appropriate authorities if required by Federal, State/Provincial and local laws and regulations.

6.3. Methods for cleaning up

- Sweep up and shovel into suitable containers for disposal.
- Avoid dust formation.
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

7. HANDLING AND STORAGE

7.1. Handling

- Take measures to prevent the build up of electrostatic charge.
- Ensure all equipment is electrically grounded before beginning transfer operations.
- Use only equipment and materials which are compatible with the product.
- To avoid thermal decomposition, do not overheat.

7.2. Storage

- Keep container closed.
- Keep away from heat and sources of ignition.

7.3. Other information

- Keep away from open flames, hot surfaces and sources of ignition.
- To avoid thermal decomposition, do not overheat.
- Avoid dust formation.
- Refer to protective measures listed in sections 7 and 8.
- Do not smoke.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Exposure Limit Values

Poly(amide-imide) polymer

- PEL (OSHA / USA)
= 15 mg/m³
Remarks: Particulates not otherwise regulated total dust
- PEL (OSHA / USA)
= 5 mg/m³
Remarks: Particulates not otherwise regulated respirable fraction
- US. ACGIH Threshold Limit Values
= 10 mg/m³
Remarks: Inhalable PNO (Particulates Not Otherwise Classified)



- US. ACGIH Threshold Limit Values
= 3 mg/m³
Remarks: Respirable PNOC (Particulates Not Otherwise Classified)

Graphite (natural)

- US. ACGIH Threshold Limit Values 2004
= 2 mg/m³
Remarks: Respirable fraction

Polytetrafluoroethylene

Remarks: Thermal decomposition of the fluorocarbon chain in air leads to the formation of oxidized products containing carbon, fluorine and oxygen. No TLVs are recommended at this time, but air concentration should be controlled as low as possible.

- US. ACGIH Threshold Limit Values
TWA = 5 mg/m³
Remarks: Respirable dust
- US. ACGIH Threshold Limit Values
TWA = 10 mg/m³
Remarks: Total dust
- PEL (OSHA / USA)
TWA = 5 mg/m³
Remarks: Respirable dust
- PEL (OSHA / USA)
TWA = 15 mg/m³
Remarks: Total dust

8.2. Engineering controls

- Provide local ventilation appropriate to the product decomposition risk (see section 10).
- Provide appropriate exhaust ventilation at places where dust is formed.
- Refer to protective measures listed in sections 7 and 8.

8.3. Personal protective equipment

8.3.1. Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.
- Respirator with combination filter for vapour/particulate (EN 141).

8.3.2. Hand protection

- When handling hot material, use heat resistant gloves.

8.3.3. Eye protection

- Safety glasses with side-shields
- Dust proof goggles, if dusty.

8.3.4. Skin and body protection

- long sleeved clothing

8.3.5. Hygiene measures

- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information

Appearance : pellets
Colour : black



Odour : odourless

9.2. Important health safety and environmental information

pH : *Remarks: not applicable*

Boiling point/range : *Remarks: not applicable*

Flash point : *Remarks: not applicable*

Flammability : Upper explosion limit:
Remarks: no data available
Lower explosion limit:
Remarks: no data available

Explosive properties : Explosion danger:
Remarks: Risk of dust explosion.

Vapour pressure : *Remarks: not applicable*

Relative density / Density : *Remarks: no data available*

Solubility : Water
Remarks: negligible

Partition coefficient (n-octanol/water) : *Remarks: not applicable*

9.3. Other data

: 280 °C (536 °F)
Remarks: Softening point

Decomposition temperature : *Remarks: no data available*

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under normal conditions.
- Hazardous Polymerisation/Polymerization: no

10.2. Conditions to avoid

- Heat, flames and sparks.
- To avoid thermal decomposition, do not overheat.
- Avoid dust formation.

10.3. Materials to avoid

- no data available

10.4. Hazardous decomposition products

- Carbon dioxide (CO₂), The release of other hazardous decomposition products is possible.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Remarks

- The product is biologically inert.



- Because the components are encapsulated in the resin and may not be bioavailable in the body, they may not exert the above mentioned health effects.
- Product dust may be irritating to eyes, skin and respiratory system.
- Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components.
- The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Remarks: no data available

Chronic toxicity

- Remarks: no data available

12.2. Mobility

- Remarks: no data available

12.3. Persistence and degradability

Abiotic degradation

- Result: no data available

Biodegradation

- Remarks: no data available

12.4. Bioaccumulative potential

- Result: no data available

12.5. Other adverse effects

- no data available

12.6. Remarks

- The product is biologically inert.
- Ingestion of solids may cause harm to wildlife due to intestinal mechanical blockage or starvation from false feeling of satiation.

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations.
- Waste characterizations and compliance with applicable laws and regulations are the responsibility of the waste generator.

13.2. Packaging treatment

- Empty containers.
- Dispose of as unused product.
- For unused and uncontaminated product, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or other thermal destruction device or industrial landfill.

13.3. RCRA US Regulation

- Listed RCRA Hazardous Waste - No

14. TRANSPORT INFORMATION



- Sea (IMO/IMDG)
- not regulated
- Air (ICAO/IATA)
- not regulated
- European Road/Rail (ADR/RID)
- not regulated
- U.S. Dept of Transportation
- not regulated
- Canadian Transportation of Dangerous Goods
- not regulated

15. REGULATORY INFORMATION

15.1. Inventory Information

Toxic Substance Control Act list (TSCA)	: -	Listed on inventory.
Canadian Domestic Substances List (DSL)	: -	Listed on inventory.
Australian Inventory of Chemical Substances (AICS)	: -	One or more components not listed on inventory.
Japanese Existing and New Chemical Substances (MITI List) (ENCS)	: -	Listed on inventory.
Korean Existing Chemicals List (ECL)	: -	Listed on inventory.
Philippine Inventory of Chemicals and Chemical Substances (PICCS)	: -	One or more components not listed on inventory.
Inventory of Existing Chemical Substances (China) (IECS)	: -	In compliance with inventory.
EU list of existing chemical substances (EINECS)	: -	In compliance with inventory.

15.2. Other regulations

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

- not regulated.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

- not regulated.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

- not regulated.

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

- not regulated.

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components	CAS-No.	Concentration
Graphite (natural)	7782-42-5	>= 7.00 - <= 13.00 %
Polytetrafluoroethylene	9002-84-0	>= 1.00 - <= 3.00 %

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

- not regulated.



16. OTHER INFORMATION

Administrative information

- Update
- Supersedes version dated: 01/17/2000

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