# Material Safety Data Sheet

**According to Regulation (EC) No. 1907/2006 (REACH)**

## 1. Chemical Product and Company Information

1) Product : TRIEL 5401BM BK (CODE : 5409A)

2) Recommended use of the chemical and restrictions on use.

- Recommend use : NA
- Restriction on use : NA

3) Manufacture/Supplier information

- Supply company : Samyang Corporation
- Address : 263 Yeonji-dong, Jongno-gu, Seoul, Korea
- Information service or emergency call : 063-210-6664
- Department in charge : Jeon-Ju EP plant Technology Dept.

## 2. Hazards Identification

1) Classification of the substance or mixture : NA

2) GHS labels, including precautionary statements

| Symbol | Signal word | Hazard statement |
|---|---|---|
| NA | NA | NA |

- Precautionary statement
  - Prevention : NA
  - Storage : NA
  - Disposal : NA

3) Other hazards which do not result in classification (NFPA)

- Health : 1
- Fire : 1
- Reactivity : 0

## 3. Composition and Information on Ingredients

1) Substance name : Thermoplastic polyether ester elastomer(TPEE)

2) Contents

| Component | CAS No. | Content(%) |
|---|---|---|
| Thermoplastic polyether ester elastomer | 9078-71-1 | 85~95 |
| Polybutylene terephthalate | 26062-94-2 | 1~5 |
| Antioxidant | Confidential | 1~3 |
| Pigment portion | - | <2.0 |
| Further additives portion | - | <1.5 |

## 4. First Aid Measures

1) Eye contact
- Flush eyes immediately with water for at least 20 minutes
- Get immediate medical attention

2) Skin contact
- Wash immediately with water for at least 20 minutes
- Destroy contaminated shoes and clothes
- Thoroughly clean contaminated clothing and shoes before re-use
- Get immediate medical attention

3) Inhalation
- Get immediate medical attention
- Remove patient to fresh air
- If not breathing, give artificial respiration
- If breathing is difficult, give oxygen

4) Ingestion
- Never give anything by mouth to an unconscious person
- Get immediate medical attention

## 5. Fire Fighting Measures

1) Recommended (or Prohibited) extinguishing media

- Small fire : dry sand, dry chemical, alcohol resistant foam, water spray, regular foam, carbon dioxide($CO_2$), (recommended extinguishing media)
- Large fire : water spray/ fog, regular foam (recommended extinguishing media)
- High volume water jet (Prohibited extinguishing media)

2) Specific hazard from chemical material
- Flammable by heat, spark and/or flame
- Container may explode if heated
- Partially may burn, although not easily inflammable
- May produce toxic gas in case of fire
- Harmful if substance is inhaled
- Some liquids produce gas which cause dizziness and/or suffocation

3) Protective equipment and precautions for fire-fighters
- Move container from fire area if you can do it without risk
- Some of material could be transported in a high temperature condition
- Split material can cause contamination
- Physical contact may burn skin and eyes
- For proper disposal of fire extinguishing chemicals, dig ditch to prevent chemicals from scattering
- Cool tanks and containers exposed to fire and excessive heat with water.
- Immediately escape from the fire area if there is noise from the exhaust system and color change of the tank caused by fire.

## 6. Accidental Release Measures

1) Necessary actions to protect human health
- Remove all sort of ignition
- Stop leaking, if not dangerous
- Be aware of materials and conditions that need be avoided
- Ventilate the polluted area
- Do not touch or walk through spilt material
- Prevent dust formation

2) Necessary actions to protect the environment
- Prevent entry into sewers, water courses, basements or confined areas

3) Purification and removal methods
- Small leak : wash the polluted area with a lot of water / absorb with sand, non-flammable material and place in a container
- Large leak : Dig a ditch far from spill area
- Shovel and scoop split material and put in the dry, clean container. The container must be covered loosely

## 7. Handling and Storage

1) Safety handling
- Be aware of materials and conditions that need be avoided
- Wash thoroughly after handling the materials
- Put on appropriate personal protective equipment (see section 8).
- Keep away from heat

2) Storage
- Store in an alright container
- Store in cool and dry place
- Be aware of materials and conditions that need be avoided

## 8. Exposure Control and Personal Protection

1) Exposure limits and biological exposure limits of chemical

- Domestic regulation : NA
- ACGIH : NA
- biological exposure limits : NA

2) Engineering management

- Maintain the level of atmosphere under the exposure limits

3) Personal protection equipment

- Respiratory protection : Concentration in air determines the level of respiratory protection needed. Use only NIOSH certified respiratory equipment.
- Hands protection : full chemically resistant protective gloves are required
- Human body protection: full chemically resistant protective clothing and boots are required

## 9. Physical and Chemical Properties

| | |
|---|---|
| 1) Appearance | 9) Flammability(solid, gas) : NA |
| ● Physical state : Solid | 10) Upper/lower flammability or explosive limits : |
| ● Color : Black | 11) Vapor pressure : |
| 2) Odor : odorless | 12) Solubility : Insoluble in the following materials(water) |
| 3) Odor threshold : NA | 13) Vapor density : nonvolatile (Oxygen=1) |
| 4) pH : | 14) Relative density : 1.14~1.16 (water=1) |
| 5) Melting point/freezing point : | 15) Partition coefficient: n-octanol/water : |
| 6) Initial boiling point or boiling range : | 16) Auto-ignition temperature : |
| 7) Flash point : | 17) Decomposition temperature : |
| 8) Evaporation rate : negligible | 18) Viscosity : NA |

## 10. Stability and Reactivity

1) Chemical stability

- Stable under normal temperatures and pressures
- Container may explode if heated
- Partially may burn, although not easily inflammable.
- May produce toxic gas in case of fire.
- Harmful if substance is inhaled
- Some liquids produce gas which cause dizziness and/or suffocation

2) Possibility of hazardous reactions
- Polymerization could be occurred under high temperature

3) Conditions to avoid
- Ignitions: heat, sparks and open flame

4) Materials to avoid
- Flammable materials,

5) Hazardous decomposition products
- NA

## 11. Toxicological Information

1) Information on the likely routes of exposure : NA

2) Health Hazard Information

- acute health effects : NA
- oral : NA
- dermal : NA
- inhalation : NA
- Skin corrosion/irritation
  - Serious eye damage/eye irritation: NA
  - Respiratory sensitization: NA
  - Skin sensitization: NA
- Carcinogenicity
  - Industrial Safety and Health Law : NA
  - Ministry of Labor : NA
  - IARC : NA
  - OSHA : NA
  - ACGIH : NA
  - NTP : NA
  - EU CLP : NA
- Germ cell mutagenicity : NA
- Reproductive toxicity : NA
- Specific target organ systemic toxicity (single exposure) : NA
- Specific target organ systemic toxicity (repeated exposure) :
- Aspiration hazard : NA

## 12. Ecological Information

1) Hazardous to the aquatic, terrestrial environment

- Fish : NA
- crustacean : NA
- algae : NA

2) Persistence and degradability :

- persistence :
- degradability : NA

3) Bioaccumulative potential :

4) Mobility in soil : NA

5) Other adverse effects : NA

## 13. Disposal Considerations

1) Methods of disposal

- Follow federal, state and local regulations

2) Disposal cautions

- Follow federal, state and local regulations

## 14. Transport Information

1) UN number : Not regulated

2) Proper Shipping Name :

3) Transport hazard classes :

4) Packing group :

5) Marine Pollutant

6) Special precautions for user

- Emergency management type of fire
- Emergency management type of leak

## 15. Regulatory Information

1) Industrial safety and health act (Korea)

2) Toxic chemical substance subject to management act (Korea)

3) Hazardous material safety act (Korea) :

4) Wastes control act (Korea) : designated waste

5) Other internal and foreign acts

- Domestic regulations

- Persistent organic pollutant control act (Korea) :

- International regulations

  - OSHA :
  - CERLA :
  - EPCRA 302 :
  - EPCRA 304 :
  - EPCRA 313 :
  - Rotterdam Convention on Harmful Chemicals & Pesticides :
  - Montreal protocol :
  - EU classification ( Classification ) :
  - EU classification ( Risk Phrases ) :
  - EU classification ( Safety Phrases ) :

## 16. Other Information

1) References

- Korea dangerous material inventory management system (http://www.nema.kr/hazmat)
- European chemical Substances Information System(ESIS) (http://ecb.jrc.ec.europa.eu/esis)
- National Chemicals Information System (http://ncis.nier.go.kr/totinfo)
- Globally Harmonized System of Classification and Labeling of Chemicals (http://ncis.nier.go.kr/ghs)

2) Date of preparation of the first version

- 26.01.2011

3) Others

- This document based on the information provided by company. The information relates exclusively to the specified products, which may not be suitable for combination with other materials or use in processes other than those specifically described here.