



## SAFETY DATA SHEET North America U.S. GHS Format

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### 1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY

**Trademark:** THERMOTUF™  
**Product Code:** V1000UXC - 7P1D082

**Product Description:** Polyamide 66 [CASRN 32131-17-2]

**Product Type:** Commercial Product

**Recommended use:** May be used to produce molded or extruded articles or as a component of other industrial products.

**Company:** SABIC Innovative Plastics US LLC  
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United States

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**Website Address:** [www.sabic-ip.com](http://www.sabic-ip.com)

## 2. HAZARDS IDENTIFICATION

The additives in this product (if any) are bound in a thermoplastic resin matrix. In accordance with GHS for the classification of the product, the hazard potential may be assessed with respect to the physico-chemical form and/or bioavailability of the individual components in the thermoplastic resin.

Where GHS classifications are shown below, these are based on the individual components in the thermoplastic resin matrix. Under the typical use conditions for the resin, these hazardous components are unlikely to contribute to workplace exposure. Please read the entire safety data sheet and/or consult an EHS professional for a complete understanding.

### Classification

#### **OSHA Regulatory Status**

This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

In 1995, the International Agency for Research on Cancer (IARC) concluded that there is "sufficient evidence in experimental animals for the carcinogenicity of carbon black." IARC's overall evaluation was that "Carbon black is possibly carcinogenic to humans (2B)." In 2006, IARC re-affirmed this classification. There has been no causal link between carbon black exposure and cancer risk in humans. Applying the rules of the Globally Harmonized System of Classification and Labelling (GHS, e.g. UN 'Purple Book', EU CLP Regulation) the results of repeated dose toxicity and carcinogenicity studies in animals do not lead to classification of Carbon Black for Specific Target Organ Toxicity (Repeated exposure) and carcinogenicity. UN GHS says, that even if adverse effects are seen in animal studies or in-vitro tests, no classification is needed if the mechanism or mode of action is not relevant to humans. The European CLP Regulation also mentions, that no classification is indicated if the mechanism is not relevant to humans. Furthermore, the CLP guidance on classification and labelling states, that "lung overload" in animals is listed under mechanism not relevant to humans.

### GHS-Labeling

#### **Emergency Overview**

#### **Not classified**

The product contains no substances which at their given concentration, are considered to be hazardous to health

**Appearance:** Pellets

**Physical State:** Solid

**Odor:** None or slight

#### **Hazards not otherwise classified (HNOC)**

Not applicable

#### **Other Information**

Not applicable

Other hazards which do not result in classification:

#### **SABIC Emergency Overview**

- Pellets with slight or no odor
- Spilled material may create slipping hazard
- Can burn in a fire creating dense, toxic smoke
- Molten plastic can cause severe thermal burns
- Fumes produced during melt processing may cause eye, skin, and respiratory tract irritation. Severe over-exposure may result in nausea, headache, chills, and fever. See below for additional effects.
- Secondary operations, such as grinding, sanding, or sawing can produce dust which may present an explosion or respiratory hazard.

**Other Information:** OSHA, IARC and/or NTP have listed carbon, titanium dioxide, crystalline silica (quartz), respirable glass and certain heavy metals, present in some colorants and fillers, as carcinogens. If these materials are present in this product at significant quantities, they are shown in Section 2/3. These materials are essentially bound to the plastic matrix and are unlikely to contribute to workplace exposure under recommended processing conditions.

**Processing Issues:** Processing vapors may cause irritation to the eyes, skin, and respiratory tract. In cases of severe exposure, nausea and headache can also occur. Grease-like processing vapor condensates on ventilation ductwork, molds, and other surfaces can cause irritation and injury to skin.

**Aggravated Medical Conditions:** MEDICAL RESTRICTIONS: There are no known health effects aggravated by exposure to this product. However, certain sensitive individuals and individuals with respiratory impairments may be affected by exposure to components in the processing vapors.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Product Type** Mixture

**HAZARDOUS COMPONENTS:**

Chemical Name	CAS Number	Weight %	GHS Classification (EC) No. 1272/2008 [CLP]:
Maleic anhydride	108-31-6	5 - 10	Acute Tox. 4 (H302) Skin Corr. 1B (H314) Resp. Sens. 1 (H334) Skin Sens. 1 (H317)
Titanium dioxide	13463-67-7	0.3-1.0	
Carbon black	1333-86-4	0.1 - 0.3	

The non-hazardous components and exact percentage (concentration) of the composition have been withheld as a trade secret.

This product consists primarily of high molecular weight polymers which are not expected to be hazardous. The ingredients in this product are present within the polymer matrix and are not expected to be hazardous.

### 4. FIRST AID MEASURES

**If Inhalation:** Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.

**On skin contact:** Immediately cool the skin by rinsing with cold water after contact with hot material. Wash off immediately with soap and plenty of water. Consult a physician.

**On contact with eyes:** Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, consult a specialist.

**On ingestion:** Not probable due to nature of the product. If a large amount of pellet material is swallowed, consult a physician for medical treatment.

**Precautions:** Processing vapors inhalation may be irritating to the respiratory tract. If symptoms are experienced remove victim from the source of contamination or move victim to fresh air and obtain medical advice.

## 5. FIRE-FIGHTING MEASURES

<b>Autoignition Temperature:</b>	No information available
<b>Explosive Properties:</b>	Avoid generating and accumulating dusts; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
<b>Suitable Extinguishing Media:</b>	Use dry chemical, CO <sub>2</sub> , water spray or "alcohol" foam. Water is the best extinguishing medium. Carbon dioxide and dry chemical are not generally recommended because their lack of cooling capacity may permit re-ignition on larger resin fires (blobs, drools, etc.).
<b>Unsuitable Extinguishing Media for Safety Reasons:</b>	Do not use a solid water stream as it may scatter and spread fire.
<b>Hazards from Combustion Products:</b>	Fire will produce dense black smoke containing hazardous combustion products, carbon oxides, hydrocarbon fragments.
<b>Special Protective Equipment for Firefighters:</b>	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products.
<b>Specific Hazards:</b>	Take precautionary measures against static discharges, During processing, dust may form explosive mixture in air, Thermal decomposition can lead to release of irritating gases and vapors.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Clean up:</b>	Sweep up and shovel into suitable containers for disposal. Do not create a powder cloud by using a brush or compressed air.
<b>Personal Precautions:</b>	See section 8.
<b>Environmental Precautions:</b>	Do not flush into surface water or sanitary sewer system. Material should not be released into the environment.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Handle in accordance with good industrial hygiene and safety practices. Provide for appropriate exhaust ventilation and dust collection at machinery. Avoid dust formation. All metal parts of the mixing and processing equipment must be earthed.
<b>Storage:</b>	Store in closed container in a dry and cool area. Keep away from heat sources and sources of ignition.
<b>Incompatible Products:</b>	No special restrictions on storage with other products.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure limits:**

No components with information, unless noted below

Chemical Name	US OSHA PEL (8 Hr)	ACGIH	Canada - Alberta (8 Hr)	Mexico OEL Data	SABIC Recommend (8 Hr)*
Maleic anhydride 108-31-6	FRL_TWA: 1 mg/m <sup>3</sup> , 0.25 ppm; TL_PEL: 1 mg/m <sup>3</sup> , 0.25 ppm	TWA: 0.1 ppm; Notations: Not Classifiable as a Human Carcinogen, Sensitization; Crit Eff: Eye irritation, Skin irritation, Upper respiratory tract irritation	OEL_8 hr: 0.4 mg/m <sup>3</sup> , 0.1 ppm	LMPE-PPT: 0.25 ppm , 1 mg/m <sup>3</sup>	No Information
Titanium dioxide 13463-67-7	FRL_TWA: 5 mg/m <sup>3</sup> Respirable fraction, 10 mg/m <sup>3</sup> Total dust; TL_PEL: 5 mg/m <sup>3</sup> Respirable fraction, 15 mg/m <sup>3</sup> Total dust	TWA: 10 mg/m <sup>3</sup> ; Notations: Not Classifiable as a Human Carcinogen; Crit Eff: Lower respiratory tract irritation	OEL_8 hr: 10 mg/m <sup>3</sup> ; Substance interaction: SL_3	LMPE-PPT: 10 mg/m <sup>3</sup> como Ti; LMPE-CT: 20 mg/m <sup>3</sup> como Ti; CONN: A4	No Information
Carbon black 1333-86-4	FRL_TWA: 3.5 mg/m <sup>3</sup> ; TL_PEL: 3.5 mg/m <sup>3</sup>	TWA: 3.5 mg/m <sup>3</sup> ; Notations: Not Classifiable as a Human Carcinogen	OEL_8 hr: 3.5 mg/m <sup>3</sup>	LMPE-PPT: 3.5 mg/m <sup>3</sup> ; LMPE-CT: 7 mg/m <sup>3</sup> ; CONN: A4	No Information

\*SABIC Recommended Exposure Limits have been established for certain chemicals.

**Engineering Measures to Reduce Exposure:**

Handle in accordance with good industrial hygiene and safety practice. Provide for appropriate exhaust ventilation at machinery. Processing fume condensate may be a fire hazard and toxic; remove periodically from exhaust hoods, ductwork, and other surfaces using appropriate personal protection.

**Hand Protection:**

Protective gloves should be worn.

**Eye Protection:**

Safety glasses with side-shields or chemical goggles. In addition, use full-face shield when cleaning processing vapor condensates from hood, ducts, and other surfaces.

**Respiratory Protection:**

When using this product at elevated temperatures, implement engineering systems, administrative controls or a respiratory protection program (including a respirator approved for protection from organic vapors, acid, gases, and particulate matter) if processing vapors are not adequately controlled or operators experience symptoms of overexposure. If dust or powder are produced from secondary operations such as sawing or grinding, use a respirator approved for protection from dust.

**Body Protection:**

Long sleeved clothing.

**Hygiene Measures:**

When using, do not eat, drink or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Solid
<b>Appearance:</b>	Pellets
<b>Color:</b>	Same as color code
<b>Odor:</b>	None or slight
<b>Odor Threshold:</b>	No information available
<b>pH</b>	No data available
<b>Boiling point/range:</b>	Not determined
<b>Melting point/range:</b>	This product does not exhibit a sharp melting point but softens gradually over a wide range of temperatures.
<b>Autoignition Temperature:</b>	No information available
<b>Flammability (solid, gas):</b>	No information available
<b>Vapor Pressure:</b>	Negligible
<b>Water Solubility:</b>	Insoluble
<b>Partition coefficient: (n-octanol/water)</b>	No information available
<b>Vapor Density:</b>	Not determined
<b>Evaporation Rate:</b>	Negligible
<b>Decomposition temp. (°C) :</b>	Not determined
<b>Specific gravity:</b>	>1; (water = 1)
<b>VOC content (%) :</b>	Negligible
<b>Explosive Limits</b>	
<b>upper:</b>	Not determined
<b>lower:</b>	Not determined

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under ambient conditions. Hazardous polymerization does not occur.
<b>Conditions to Avoid:</b>	To avoid thermal decomposition, avoid elevated temperatures. Heating can result in the formation of gaseous decomposition products, some of which may be hazardous. Do not exceed melt temperature recommendations in product literature. Purgings of hot material should be collected in small, flat, thin shapes and quenched with water to allow for rapid cooling. Do not allow product to remain in barrel at elevated temperatures for extended periods of time.
<b>Hazardous Decomposition Products:</b>	Process vapors under recommended processing conditions may include trace levels of hydrocarbons, carbon oxides, nitrogen oxides (NOx), ammonia, hydrogen cyanide (hydrocyanic acid), aldehydes, cyclopentanone, sulfur oxides, maleic anhydride.
<b>Incompatible Products:</b>	None known.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

**LD50/oral/rat:** >5000 mg/kg

**LD50/dermal/rabbit:** >2000 mg/kg

**Inhalation:** Pellet inhalation unlikely due to physical form. Processing vapors may cause irritation to the eyes, skin, and respiratory tract. In cases of severe exposure, nausea and headache can also occur. Grease-like processing vapor condensates on ventilation duct work, molds, and other surfaces can cause irritation and injury to skin. Processing fumes may contain maleic anhydride which may cause headaches, nausea, irritation, asthma-like reactions with shortness of breath, wheezing, or cough. High overexposure to maleic anhydride may ulceration of the upper respiratory passages, pulmonary edema (body fluid in the lungs) and shortness of breath. Prompt medical attention is required.

**Eye Contact:** Resin particles, like other inert materials, are mechanically irritating to eyes.

**Skin Contact:** Not a hazard with pellets during normal industrial use.

**Ingestion:** Pellet ingestion unlikely due to physical form.

**Chronic Toxicity:** No information available.

**Subchronic Toxicity:** No information available

**Sensitization:** No information available on this product. Processing fumes may contain maleic anhydride, which may cause skin sensitization.

**Primary Irritation:** Substance does not generally irritate and is only mildly irritating to the skin.

**IARC:** Not listed

**OSHA:** Not regulated

**NTP:** Not tested

**Remarks:** The toxicological data has been taken from products of similar composition.

**Special Studies:**

Carbon Black: The International Agency for Research on Cancer (IARC) has determined that carbon black is a class 2B known animal and possible human carcinogen by the route of inhalation. Rats exposed to high doses of carbon black by inhalation developed statistically significant increases in lung fibrosis and lung tumors.

Carbon Black: The scientific discussions about the carcinogenic potential of inorganic low solubility particles (fine dust) including carbon black has not been concluded. Many inhalation toxicologists believe the lung fibrosis and tumors that developed in rats following exposure to carbon black result from massive accumulation of small dust particles that overwhelm the clearance mechanism and produce what is termed "lung overload," an effect considered to be rat specific and not relevant to humans. In addition, based on epidemiological studies, no causal link between carbon black exposure and cancer risk in humans has been demonstrated.

Titanium Dioxide: The International Agency for Research on Cancer (IARC) has determined titanium dioxide to be a possible human carcinogen (class 2B) based on evidence in experimental animals. Rats exposed to high doses of titanium dioxide by inhalation or intratracheal instillation showed an increased incidence of lung tumors.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity Effects:** Do not flush into surface water or sanitary sewer system.

**Other information:** Ecological damages are not known or expected under normal use.

## 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:** Where possible recycling is preferred to disposal or incineration. Dispose of in accordance with local regulations.

**Contaminated Packaging:** Empty containers should be taken for local recycling, recovery or waste disposal.

**Waste Disposal:** Recycling is encouraged. Landfill or incinerate in accordance with federal, state and local requirements. Collected processing fume condensates and incinerator ash should be tested to determine waste classification.

## 14. TRANSPORT INFORMATION

**Transport Classification:** Not regulated as hazardous for shipment, unless noted below, under current transportation guidelines.

DOT

ADR/RID/ADN

IMDG

ICAO

IATA-DGR

MEXICO

CANADA/TDG

## 15. REGULATORY INFORMATION

**International Inventories:**

<b>TSCA (USA):</b>	Listed
<b>DSL (Canada):</b>	Listed
<b>EINECS/ELINCS (Europe):</b>	Listed
<b>ENCS (Japan):</b>	Listed
<b>IECSC (China):</b>	Listed
<b>KECL (Korea):</b>	Listed
<b>PICCS (Philippines):</b>	Listed
<b>AICS (Australia):</b>	Listed
<b>NZIoC (New Zealand):</b>	Listed



**Other Inventory Information:**

A "Listed" entry above means all chemical components are on the respective inventory list and/or a qualifying exemption exists for one or more components. A "Not listed" entry above indicates one or more components is restricted from import or manufacture into that country/region. Articles are exempt from registration and are therefore not listed on the national chemical inventories.

**SVHC (REACH Regulation (EC) No 1907/2006 and 453/2010, as amended):**

This product does not intentionally contain SVHC chemicals except as noted below. Incidental amounts of impurities, if present, would be below the threshold limit of 0.1% by weight.

**SARA (313) Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):**

This product contains a chemical or chemicals that are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS Number	Weight %	CERCLA/SARA 313 de minimus:
Maleic anhydride	108-31-6	5 - 10	1.0

**SARA (311, 312) hazard class:**

Acute Health Hazard	N
Chronic Health Hazard	N
Fire Hazard	N
Sudden Release of Pressure Hazard	N
Reactive Hazard	N

**Canada - WHMIS Classification:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR. Unless noted below, this product is non-controlled. Some classifications may not apply to the entire product.

Chemical Name	Weight %	WHMIS hazard class:
Maleic anhydride 108-31-6	5 - 10	0.1%; English Item 964; French Item 231 D1B; D2A; E

**California Proposition 65:**

Components in this product known to the State of California to cause cancer and/or reproductive effects, are listed below:

Chemical Name	Weight %	California Proposition 65:
Titanium dioxide 13463-67-7	0.3-1.0	Listed: September 2, 2011 Carcinogenic. (airborne, unbound particles of respirable size)
Carbon black 1333-86-4	0.1 - 0.3	Listed: February 21, 2003 Carcinogenic. (airborne, unbound particles of respirable size)

**RoHS EU Directive 2011/65/EU:**

The subject product is in compliance with EU RoHS Directive 2011/65/EU. All below chemicals are not employed in the manufacture of the product: a.Cadmium and its compounds, b.Lead and its compounds, c.Mercury and its compounds, d.Hexavalent chromium compounds, e.Polybrominated biphenyls (PBBs), f.Polybrominated diphenyl ethers (PBDEs including Deca-BDE). The trace levels of heavy metals may be present as impurities within threshold limits (<0.1% for Pb, Hg, Cr VI, and <0.01% for Cd). We are disclosing this information, to the best of our knowledge, based upon data from our raw material manufacturers.

**HMIS Rating**

Health: 0

Flammability: 1

Reactivity: 0

## 16. OTHER INFORMATION

**SABIC and brands marked with ™ are trademarks of SABIC or its subsidiaries or affiliates.**

Visit our public website to search, view and print Safety Data Sheets for commercial products:  
<http://eur.sabic-ip.com/ordeur/pages/msds/MSDSSearch.jsp?app=sabic-ip>

**SDS Scope:**

USA: Conforms to 29 CFR 1910.1200 (2012 OSHA Hazard Communication Standard)  
This document is also applicable in other countries and regions.

**Prepared by:** Product Stewardship & Toxicology

**Reason for revision:** Update to GHS format

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**End of Safety Data Sheet**