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SAFETY DATA SHEET
Asia Pacific GHS Format

Print date: 05-Jul-2014 *Revision Number: 3* *Revision date: 04-Jul-2014*

1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY

Trademark:	VALOX™
Product Code:	VC112 -BK1066
Product Description:	Poly (butylene terephthalate) [CASRN 30965-26-5]
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 Japan LLC. Tokyo Club Building, 2-6 3Chome Kasumigaseki, Chiyoda-Ku Tokyo, 100-0013 Japan SABIC Innovative Plastics (China) Ltd.or SABIC Innovative Plastics International Trading Shanghai Ltd. 2550 Xiupu Road, Pudong New Area, Shanghai 201319, China (Conact address) SABIC Korea, Ltd. 20F, Donghoon Building, 317, Teheran-ro, Seoul, Korea SABIC Innovative Plastics Singapore Pte Ltd 23, Benoi Road, 629895 Singapore SABIC Innovative Plastics (Thailand) Co. Ltd 64/22 Moo 4 Tumbol Pluak Daeng, Amphur Pluak Daeng,Rayong 21140 Thailand SABIC Innovative Plastics India Ltd. Plastics Avenue, P.O. Jawaharnagar,District Vadodara 391320 India SABIC Taiwan Holding Ltd, Taiwan Branch. Room B,7F,No. 8,Min-Sheng E. Rd. Sec. 3,Taipei City 10480 Taiwan SABIC Innovative Plastics Hong Kong Limited. Flat/ RM 1701, Tower 1, The Gateway 25 Canton Road, Tsimshatsui, Hong Kong
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Website Address:	**www.sabic.com**

2. HAZARDS IDENTIFICATION

The additives in this product 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.

Globally Harmonized System, UN(GHS) - Classification

GHS Category

Not hazardous • Not classified

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.
Route of exposure, mechanistic information and metabolism studies are pertinent to determining the relevance of an effect in humans(GHS section 1.3.2.4.9.4). Where appropriate, GHS classification can be specified as route-dependent. The size distribution of the pellets containing the Antimony Trioxide eliminates the carcinogenicity hazard potential from Antimony Trioxide. This is the case because carcinogenicity of Antimony Trioxide has only been observed in animal studies under conditions that can lead to pulmonary overload.

GHS-Labeling

GHS Labeling not required

Hazard Statements
- Suspected of causing cancer via inhalation

Precautionary Statements

No GHS specific Precautionary Statements required - observe all other warnings and handling instructions in this SDS.

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 %	ELINCS / EINECS-No.:
Carbon fibers/graphite	7440-44-0	10-30	2311533
Antimony trioxide Sb2O3	1309-64-4	1-10	2151750
Carbon black	1333-86-4	0.1-1.0	2156099

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: No hazards which require special first aid measures.

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

Autoignition Temperature: 630°C (1166°F) estimated

Explosive Limits

upper: Not determined
lower: Not determined

Suitable Extinguishing Media: Use dry chemical, CO2, 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.).

Unsuitable Extinguishing Media for Safety Reasons: Do not use a solid water stream as it may scatter and spread fire.

Hazards from Combustion Products: Fire will produce dense black smoke containing hazardous combustion products, carbon oxides, hydrocarbon fragments, brominated hydrocarbons.

Specific Hazards: 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.

Special Protective Equipment for Firefighters: 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

Exposure hazards: Do not release chemically contaminated water into drains, soil or surface water. Sufficient measures must be taken to retain the water used for extinguishing. Dispose of contaminated water and soil according to local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: See section 8.

Environmental Precautions: Do not flush into surface water or sanitary sewer system. Material should not be released into the environment.

Clean up: Sweep up and shovel into suitable containers for disposal. Do not create a powder cloud by using a brush or compressed air.

7. HANDLING AND STORAGE

Handling: 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

Storage: Store in closed container in a dry and cool area. Keep away from heat sources and sources of ignition. Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a dry and well-ventilated place.

Incompatible Products: Strong acids, strong oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits: No components with information, unless noted below

Chemical Name	US OSHA PEL (8 Hr)	Japan OEL(TWA)	China OEL(TWA)	Korea OEL(TWA)	Singapore OEL(TWA)	Thailand OEL(TWA)
Carbon fibers/graphite 7440-44-0	2.5 mg/m^3 Respirable dust. 5 mg/m^3 Respirable fraction. 10 mg/m^3 Total dust.	OEL_M: 2 mg/m^3 Total dust , 0.5 mg/m^3 Respirable dust	2 mg/m^3 Respirable dust. 4 mg/m^3 Total dust.	TWA: 10 mg/m^3	2 mg/m^3	15 MPPCF
Antimony trioxide Sb2O3 1309-64-4	0.5 mg/m^3	0.1 mg/m^3	0.5 mg/m^3 Sb	TWA: 0.5 mg/m^3 as Sb	PEL_LT: 0.5 mg/m^3 as Sb	No Information
Carbon black 1333-86-4	FRL_TWA: 3.5 mg/m^3 ; TL_PEL: 3.5 mg/m^3	OEL_M: 4 mg/m^3 Total dust , 1 mg/m^3 Respirable dust	1	TWA: 3.5 mg/m^3	PEL_LT: 3.5 mg/m^3	No Information

Chemical Name	India TWA	Malaysia OEL(TWA)	Taiwan OEL(TWA)	Australian OEL(TWA)	Phillipines OEL(TWA)	SABIC Recom'd. (8 Hr)*
Carbon fibers/graphite 7440-44-0	No Information	TWA: 2 mg/m^3	No Information	No Information	15 MPPCF	No Information
Antimony trioxide Sb2O3 1309-64-4	No Information	PEL_TWA8: 0.5 mg/m^3 as Sb	PC: 0.5 mg/m^3 as Sb	No Information	0.5 mg/m^3	0.5 mg/m^3 TWA as antimony compounds
Carbon black 1333-86-4	No Information	PEL_TWA8: 3.5 mg/m^3	PC: 3.5 mg/m^3	No Information	3.5 mg/m^3	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

Physical State: Solid
Appearance: Pellets
Color: Same as color code
Odor: None or slight

Melting point/range: This product does not exhibit a sharp melting point but softens gradually over a wide range of temperatures.

Flash Point: Not applicable
Evaporation Rate: Negligible

Explosive Limits	
upper:	Not determined
lower:	Not determined
Vapor Pressure:	Negligible
Specific gravity:	>1; (water = 1)
Water Solubility:	Insoluble
Autoignition Temperature:	630°C (1166°F) estimated
Explosive Properties:	Dust may form explosive mixture in air
Oxidising Properties:	Not oxidising
VOC content (%):	Negligible

10. STABILITY AND REACTIVITY

Stability: Stable under ambient conditions. Hazardous polymerization does not occur.

Polymerization: Hazardous polymerization does not occur.

Conditions to Avoid: Avoid temperatures above 630°C. 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.

Materials to Avoid: May react with strong oxidizing agents, strong acids or other highly reactive chemicals.

Hazardous Decomposition Products: Process vapors under recommended processing conditions may include trace levels of hydrocarbons, phenols, alkylphenols, diarylcarbonates, bromine, hydrogen bromide, brominated hydrocarbons.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information:

LD50/oral/rat:	>5000 mg/kg
LD50/dermal/rabbit:	>2000 mg/kg

Component Information:

Component Information Text: No data available

Sensitization

Respiratory Sensitization: Not classified

Irritation:

Eye Irritation:	no data available
Primary Irritation:	Substance does not generally irritate and is only mildly irritating to the skin

Subchronic Toxicity (28 days)

Repeated Oral Toxicity(28d): No information available
Repeated Dermal Toxicity(28d): No Information available
Subchronic Toxicity: No information available

Chronic Toxicity

Carcinogenicity: There are no known carcinogenic chemicals in this product except specifically mentioned below.

Chemical Name	IARC:
Antimony trioxide Sb2O3 1309-64-4	2B
Carbon black 1333-86-4	2B

Mutagenic Effects: No data is available on the product itself
Reproductive Toxicity: No information available
Developmental Toxicity: No information available

Neurological effects: No information available

Specific Target Organ Toxicity(STOT)

Target Organ Effects: Not established

Aspiration Hazard

Aspiration Hazard Statement: No data available

Other relevant toxicity information

IARC: Not listed
OSHA: Not regulated
NTP: Tetrahydrofuran: In 2-year carcinogenicity bioassays conducted by the National Toxicology Program (NTP), mice and rats (50/sex/group) were exposed to concentrations of 0, 200, 600, or 1,800 ppm via inhalation 6 hours/day, 5 days/week for 104 weeks. Under the conditions of these 2-year inhalation studies, there was some evidence of carcinogenic activity of tetrahydrofuran in male F344/N rats based on increased incidences of renal tubule adenoma or carcinoma (combined) at 600 and 1,800 ppm. There was no evidence of carcinogenic activity of tetrahydrofuran in female F344/N rats exposed to 200, 600, or 1,800 ppm or male B6C3F1 mice exposed to 200, 600, or 1,800 ppm. There was clear evidence of carcinogenic activity of tetrahydrofuran in female B6C3F1 mice based on increased incidences of hepatocellular neoplasms observed at 1,800 ppm.

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

Special Studies:

PROCESSING FUMES: Processing fumes evolved at recommended processing conditions may contain trace amounts of tetrahydrofuran (typically less than 1 ppm). Extreme processing conditions or temperatures may result in higher levels. See section 8 for appropriate exposure controls and personal protection. In 2-year carcinogenicity bioassays conducted by the National Toxicology Program (NTP), mice and rats (50/sex/group) were exposed to tetrahydrofuran at concentrations of 0, 200, 600, or 1,800 ppm via inhalation 6 hours/day, 5 days/week for 104 weeks. Under the conditions of these 2-year inhalation studies, there was some evidence of carcinogenic activity of tetrahydrofuran in male F344/N rats based on increased incidences of renal tubule adenoma or carcinoma (combined) at 600 and 1,800 ppm. There was no evidence of carcinogenic activity of tetrahydrofuran in female F344/N rats exposed to 200, 600, or 1,800 ppm or male B6C3F1 mice exposed to 200, 600, or 1,800 ppm. There was clear evidence of carcinogenic activity of tetrahydrofuran in female B6C3F1 mice based on increased incidences of hepatocellular neoplasms observed at 1,800 ppm.
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 form 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.
Antimony trioxide: Tested in a chronic inhalation of 45 mg/m^3 by guinea pigs resulted in extensive pneumonitis and fatty degeneration of the liver. Other long-term inhalation studies in rats and rabbits found lipid pneumonitis. One epidemiology study of process workers exposed to antimony metal suggests an increase in lung cancer. Animal studies and epidemiological studies suggests developmental toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Component Information:

100% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Chemical Name	Toxicity to Fish	Toxicity to Algae	Daphnia Magna (Water Flea)	Toxicity to Microorganisms
Carbon fibers/graphite 7440-44-0	*No data available*	*No data available*	*No data available*	*No data available*
Antimony trioxide Sb2O3 1309-64-4	*No data available*	*No data available*	*No data available*	*No data available*
Carbon black 1333-86-4	*No data available*	*No data available*	*No data available*	*No data available*

Product Information:

Persistence and Degradability

Biodegradation: Not inherently biodegradable
Partition coefficient (n-octanol/water) Not established

Bioaccumulative Potential:
Bioaccumulation: Not established

Mobility
Mobility: May be separated mechanically in waste water plants.

Other Adverse Effects

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

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 transported/delivered using a registered waste carrier for local recycling 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

IMO / IMDG Not regulated

ICAO Not regulated

IATA-DGR Not regulated

DOT Not regulated

ADR/RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories:

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

15. REGULATORY INFORMATION

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:
Antimony trioxide Sb2O3	1309-64-4	1-10	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:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS hazard class:
Non-controlled

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:
Carbon black 1333-86-4	0.1-1.0	Listed: February 21, 2003 Carcinogenic. (airborne, unbound particles of respirable size)
Antimony trioxide Sb2O3 1309-64-4	1-10	Type of Toxicity: cancer

RoHS EU Directive 2002/95/EC (and its amendments and directive 2011/65/EU):
This product complies with RoHS - it does not intentionally contain banned chemicals.

Remarks:
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.
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HMIS Rating **Health:** 0 **Flammability:** 1 **Reactivity:** 0

16. OTHER INFORMATION

Brands marked with ® or ™ are trademarks of SABIC or affiliates

SDS Scope:
China: Conforms to Chinese Regulation on the Control over Safety of Hazardous Chemicals (Decree No 591) and GHS standards GB15258,GB13698,GB/T16483 etc.
Japan: Conforms to Industrial Safety and Health Law, Japan (2006) and Industrial GHS Standards JIS Z7250, JIS Z7251
Korea: Conforms to Industrial Safety & Health Act, Ministry of Labor, Korea
Singapore: Conforms to Singapore workplace Safety and Health (WSH) Act, WSH Regulations, and GHS Standard 586
Taiwan: Conforms to Taiwan Rules on Hazard Communication and Labeling of Hazardous Substances, (Council of Labor Affairs, Taiwan) and GHS standards Z1051
Thailand: Conforms to Notification of the Ministry of Industry on the System of Classification and Hazard Communication of Hazardous Substances B.E. 2555 (2012)
This document is also applicable in other countries and regions.

Prepared by: Product Stewardship & Toxicology

DISCLAIMER: This Safety Data Sheet [SDS] information is provided based on the Hazard Communication Regulations for your region or country and for the use of the persons required to receive this information under those regulations. The information is neither designed nor recommended for any other use or for use by any other person, including for compliance with other laws. SABIC Innovative Plastics does not warrant the suitability for use of this SDS for any other material or product not specifically identified herein. SABIC Innovative Plastics does not warrant the accuracy or authenticity of this SDS unless it has been obtained directly from SABIC Innovative Plastics, or posted or viewed on a SABIC Innovative Plastics website. Modification of this SDS, unless specifically authorized by SABIC Innovative Plastics, is strictly prohibited. This SDS is based on information that is believed to be reliable, but may be subject to change as new information becomes available. Because it is not possible to anticipate all conditions of use, additional safety precautions may be required. Since the use of this material is not under SABIC Innovative Plastics' control, each user is responsible for making its own determination as to the safe and proper handling of this material in its own particular use of this material. SABIC INNOVATIVE PLASTICS MAKES NO REPRESENTATION OR WARRANTY, EITHER EXPRESS OR IMPLIED, INCLUDING AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Each user should read and understand this information and incorporate it into individual site safety programs as required by applicable hazard communication standards and regulations.

End of Safety Data Sheet