



SAFETY DATA SHEET

Asia Pacific GHS Format

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1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY

Trademark:	VALOX™
Product Code:	V3500EX - 1001
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 (Contact address) -SABIC Korea Ltd. 20F, Donghooon 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 -SABIC Innovative Plastics (Aust.) Pty. Ltd. Suite 14, Building 3, 195 Wellington Road, Clayton, Victoria, Australia 3168
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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.

Globally Harmonized System, UN(GHS) - Classification

GHS Category

Not hazardous

Not classified

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

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:

Cool skin rapidly with cold water after contact with molten material. Heating can release hazardous gases. Hazardous fumes can also occur in post-processing operations.

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]:
Antimony trioxide Sb ₂ O ₃	1309-64-4	5 - 10	Acute Tox. 5 (H303) Carc. 2 (H351)
Tetrahydrofuran	109-99-9	0.1-0.3	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319) STOT SE 3 (H335) Carc. 2 (H351)

For the full text of the H-phrases, if mentioned in this section, see Section 16.

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

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: In the event of fire, wear self-contained breathing apparatus (EU: NEN-EN137).

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)
Antimony trioxide Sb ₂ O ₃ 1309-64-4	0.5 MGM3	0.1 MGM3	0.5 MGM3 Sb	TWA: 0.5 mg/m ³ as Sb	PEL_LT: 0.5 mg/m ³ as Sb	No Information
Tetrahydrofuran 109-99-9	FRL_STEL: 735 mg/m ³ , 250 ppm ; FRL_TWA: 590 mg/m ³ , 200 ppm ; TL_PEL: 590 mg/m ³ , 200 ppm	OEL_M: 590 mg/m ³ , 200 ppm AM: urine ; OEL_B: 2 mg/l End of shift ; Parameter: Tetrahydrofuran.	300 MGM3	TWA: 20 ppm , 500 mg/m ³	PEL_LT: 200 ppm , 590 mg/m ³ ; PEL_ST: 250 ppm , 737 mg/m ³	No Information

Chemical Name	India TWA	Malaysia OEL(TWA)	Taiwan OEL(TWA)	Australian OEL(TWA)	Phillipines OEL(TWA)	SABIC Recommend (8 Hr)*
Antimony trioxide Sb ₂ O ₃ 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 MGM3	0.5 mg/m ³ TWA as antimony compounds
Tetrahydrofuran 109-99-9	No Information	PEL_TWA8: 200 ppm , 590 mg/m ³	PC: 200 ppm , 590 mg/m ³ ; Remark: the second organic solvent	No Information	590 MGM3 200 ppm	50 ppm TWA

*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. Polybutyleneterephthalate fumes and condensates may contain trace quantities of tetrahydrofuran (typically less than 1 ppm, see section 2, 3 and 11).

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.
Autoignition Temperature:	630°C (1166°F) estimated
Vapor Pressure:	Negligible
Water Solubility:	Insoluble
Evaporation Rate:	Negligible
Explosive Limits	
upper:	Not determined
lower:	Not determined
Specific gravity:	>1; (water = 1)
VOC content (%):	Negligible

10. STABILITY AND REACTIVITY

Stability:	Stable under ambient conditions. 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

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.

Antimony trioxide: Tested in a chronic inhalation of 45 mg/m³ 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:

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

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

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 Sb ₂ O ₃	1309-64-4	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:



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.

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:
Antimony trioxide Sb ₂ O ₃ 1309-64-4	5 - 10	Type of Toxicity: cancer
lead oxide 1317-36-8	<100 ppm	Listed: October 1, 1992 Carcinogenic
arsenic trioxide 1327-53-3	<100 ppm	Listed February 27, 1987 Carcinogenic and May 1, 1997 Developmental toxicity

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.

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.

HMIS Rating

Health: 0

Flammability: 1

Reactivity: 0



16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H225 - Highly flammable liquid and vapor
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer in contact with skin
H303 - May be harmful if swallowed

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<http://eur.sabic-ip.com/ordeur/pages/msds/MSDSSearch.jsp?app=sabic-ip>

SDS Scope:

Singapore: Conforms to Singapore workplace Safety and Health (WSH) Act, WSH Regulations, and GHS Standard 586
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 (2006) and GHS related Standards JIS Z7253:2012

Korea: Conforms to Industrial Safety & Health Act, Ministry of Labor, Korea

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)

Australia: National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011 (2003)]

This document is also applicable in other countries and regions.

Prepared by: Product Stewardship & Toxicology

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End of Safety Data Sheet