

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30

## Material Review Report

**Material Description:** PC+ABS

**Item Code:** 2M1150101W, 2M1150101Y, 2M1150101R

**Supplier:** SABIC Innovative Plastics

This material has the following datasheet or declaration supplied by the supplier that has been reviewed and approved by SUMMED.

Datasheet Type	Date Received	Revision
Material Safety Data Sheet (MSDS)	2024/10/24	-
Restriction of Hazardous Substances (RoHS)	2024/10/24	-
Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)	2024/10/24	--
Raw Material Data Sheet (RMDS)	2024/10/28	-
Bovine. Spongiform Encephalopathy (BSE) and Transmissible Spongiform Encephalopathy (TSE) Free Declaration	-	-
Phthalate Free Declaration	-	-
Latex Free Declaration	-	-
Others (Can add in additional compliance/datasheet info if required)	-	-

PREPARED BY: (NAME) 徐瑜欣 2024.11.30

APPROVED BY:

Department Manager	QA Manager
徐瑜欣 2024.11.30	徐瑜欣 2024.11.30

History page

Document Revision	Date	Change description
1.0	2024.11.30	First Issued

文件发行章  
Approved  
DCC

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30

## Material Safety Data Sheet (MSDS)



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

Print date: 21-Jun-2023

Revision Number: 2

Revision date: 22-Jun-2023

#### 1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY

Trademark:	C Y C O L O Y ™
Product Code:	C1200HF - 111
Product Description:	Poly (bisphenol-A-carbonate) [CASRN 111211-39-3]/Poly (acrylonitrile-butadiene-styrene) [CASRN 9003-56-9] blend
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 One Plastics Avenue Pittsfield, MA 01201 USA (413) 448-5800 <a href="http://www.sabic.com">www.sabic.com</a>
Manufacturer:	SABIC Innovative Plastics 44 Normar Rd Cobourg , K9A 4L7 Ontario Canada
Emergency Telephone Number:	800-424-9300
Emergency Transportation/CHEMTRAC (24 HOUR):	800 424-9300 (USA) +1 703-527-3887 (globally, outside USA)
E-mail:	<a href="mailto:productinquiries@sabic.com">productinquiries@sabic.com</a>
Website Address:	<a href="http://www.sabic.com">www.sabic.com</a>

Product Name: C1200HF-111

Page 1 of 10

Revision date: 22-Jun-2023

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30



## 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.

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30



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 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.
Processing Issues:	
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]:
Aluminum	7429-90-5	1 - 5	Water-react.: 2; H261 Pyr. Sol. 1 (H250)
Carbon black	1333-86-4	0.3 - <1.0	

For the full text of the H-statements, 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:	No hazards which require special first aid measures. 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.

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30



## 5. FIRE-FIGHTING MEASURES

Autoignition Temperature:	Not determined
Explosive Properties:	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.
Suitable Extinguishing Media:	Water spray mist or foam, 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.).
Unsuitable Extinguishing Media for Safety Reasons:	Carbon dioxide and dry chemical are not recommended because their lack of cooling capacity may permit re-ignition, 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, hydrogen cyanide, nitrogen oxides.
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.
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.

## 6. ACCIDENTAL RELEASE MEASURES

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

## 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.
Incompatible Products:	No special restrictions on storage with other products.

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30



## 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)*
Aluminum 7429-90-5	FRL_TWA: 5 mg/m <sup>3</sup> Respirable fraction , 15 mg/m <sup>3</sup> Total dust ; TL_PEL: as Al , 5 mg/m <sup>3</sup> Respirable fraction , 15 mg/m <sup>3</sup> Total dust	Respirable fraction - TWA: 1 mg/m <sup>3</sup> ; Notations: Not Classifiable as a Human Carcinogen ; Crit Eff: Lower respiratory tract irritation , Neurotoxicity , Pneumoconiosis	OEL_8 hr: 5 mg/m <sup>3</sup> as Al	LMPE-PPT: 5 mg/m <sup>3</sup>	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:** 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. Handle in accordance with good industrial hygiene and safety practices.

**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.

文件编号:	版本号:
000-000-MRR-011	1.0
编写:	受控日期:
徐瑜欣	2024.11.30



## 9. PHYSICAL AND CHEMICAL PROPERTIES

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

## 10. STABILITY AND REACTIVITY

Stability:	Stable under ambient conditions. Hazardous polymerization does not occur.
Conditions to Avoid:	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.
Hazardous Decomposition Products:	Process vapors under recommended processing conditions may include trace levels of hydrocarbons, phenols, alkylphenols, diarylcarbonates, styrene, acrylonitrile, acrolein, acetophenone, acetaldehyde, cumene, alpha methylstyrene, 4-vinylcyclohexene.
Incompatible Products:	None known.

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30



## 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.

**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

**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.

## 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.

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30



### 13. DISPOSAL CONSIDERATIONS

- Waste from residues / unused products:** Where possible recycling is preferred to disposal or incineration. Descartar em conformidade con as legislação locals.
- 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:**

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.

文件编号:	版本号:
000-000-MRR-011	1.0
编写:	受控日期:
徐瑜欣	2024.11.30


**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:
Aluminum	7429-90-5	1 - 5	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.

**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	0.3 - <1.0	Listed: February 21, 2003 Carcinogenic. (airborne, unbound particles of respirable size)
Styrene 100-42-5	0.01 - <0.10	Type of Toxicity: cancer
4,4'-isopropylidenediphenol (bisphenol A) 80-05-7	≤100 ppm	Listed: May 11, 2015 Type of Toxicity: Female
4-Vinylcyclohexene 100-40-3	≤100 ppm	Listed: May 1, 1996 Carcinogenic.
Cumene 98-82-8	≤100 ppm	Type of Toxicity: cancer
Acrylonitrile 107-13-1	≤100 ppm	Type of Toxicity: cancer
Ethylbenzene 100-41-4	≤10 ppm	Type of Toxicity: cancer
Methylene chloride 75-09-2	≤10 ppm	Type of Toxicity: cancer
Butadiene 106-99-0	≤10 ppm	Type of Toxicity: cancer ; Type of Reproductive Toxicity: developmental, female, male

**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

文件编号: 000-000-MRR-011	版本号: 1.0
编写: 徐瑜欣	受控日期: 2024.11.30



## 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

**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



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文件编号:	版本号:
000-000-MRR-011	1.0
编写:	受控日期:
徐瑜欣	2024.11.30

## Restriction of Hazardous Substances (RoHS)



## Test Report

No.:SHAEC2401158502

Date: 28 Feb 2024

Page 1 of 6

Client Name : SABIC INNOVATIVE PLASTICS (CHINA) CO., LTD.  
Client Address : NO1 PLASTICS AVENUE, NANSHA, GUANGZHOU CITY, CN

Sample Name : PC+ABS  
Model No : C1200HF  
The above sample(s) and information were provided by the client.

SGS Job No. :	SP24 - 012026-SH
Date of Sample Received :	22 Feb 2024
Testing Period :	22 Feb 2024 - 28 Feb 2024
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of  
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd

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Marry Ma  
Approved Signatory



Testing Center-Christopher Laboratory

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If you require a copy of the testing inspection report & certificate, please contact us at telephone (86 755) 8307 1443, or email: [CN\\_Doccheck@tsg.com](mailto:CN_Doccheck@tsg.com)

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页码： 12/41

文件编号:	版本号:
000-000-MRR-011	1.0
编写:	受控日期:
徐瑜欣	2024.11.30



## Test Report

No.:SHAEC2401158502

Date: 28 Feb 2024

Page 2 of 6

## Test Results:

## Test Part Description:

Specimen No.	SGS Sample ID	Description
SN1	SHA24-011585.001	White plastic particles

## Remarks:

- (1) 1mg/kg=1ppm=0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (<MDL)
- (4) "-" = Not Regulated

RoHS Directive(EU)2015/863 amending II to Directive 2011/65/EU

- Test Method : (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.  
(2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.  
(3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.  
(4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.  
(5) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.  
(6) With reference to EN 14372:2004, determination of phthalates by GC-MS.

Test Item(s):	Limit	Unit	MDL	001
Cadmium(Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND

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## Test Report

No.:SHAEC2401158502

Date: 28 Feb 2024

Page 3 of 6

Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	30	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	30	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	30	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	30	ND

## Notes:

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

SGS-CSTC Shanghai Quality Technical Service Co., Ltd.  
Testing Center China Laboratory

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## Test Report

No.:SHAEC2401158502

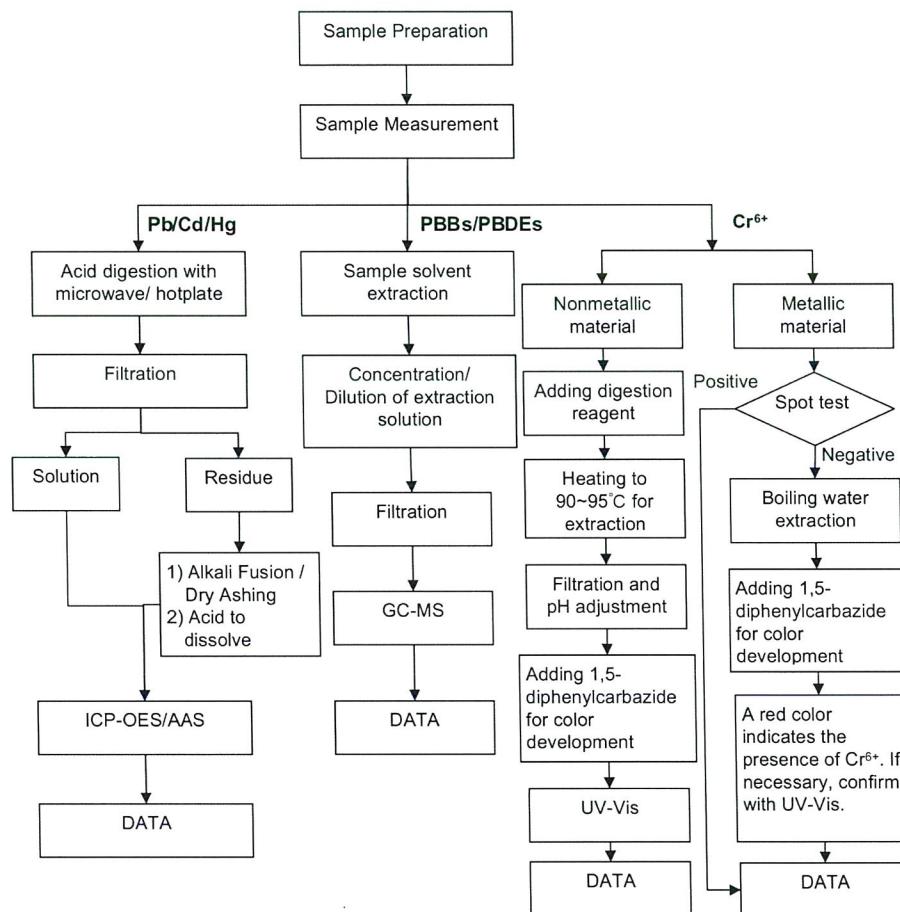
Date: 28 Feb 2024

Page 4 of 6

## ATTACHMENTS

## RoHS Testing Flow Chart

- 1) Name of the person who made testing: David Lee/Gary Xu/Zengzhen Zhu/Sunny Qin
- 2) Name of the person in charge of testing: Jan Shi/Summer Jin/Jessy Huang/Stone Chen
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr<sup>6+</sup>and PBBs/PBDEs test method excluded)



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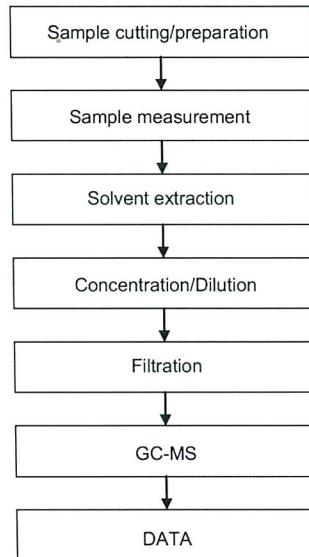
Date: 28 Feb 2024

Page 5 of 6

## ATTACHMENTS

## Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Sherlock Gao  
 2) Name of the person in charge of testing: Myra Ma



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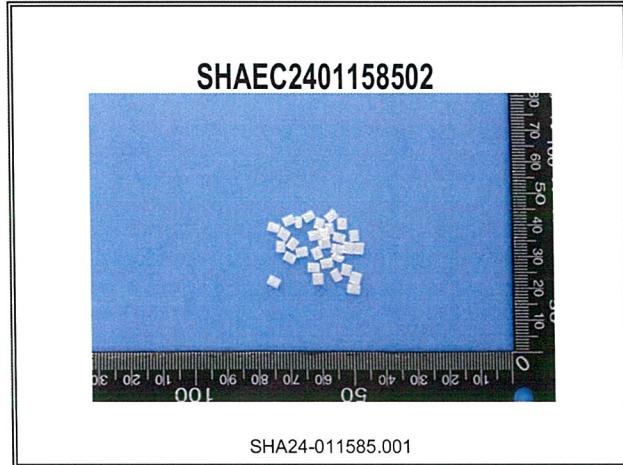
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No.:SHAEC2401158502

Date: 28 Feb 2024

Page 6 of 6

Sample photo:



SGS authenticate the photo on original report only

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## Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)



### Test Report (SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 1 of 21

Client Name : SABIC INNOVATIVE PLASTICS (CHINA) CO., LTD.  
Client Address : NO1 PLASTICS AVENUE, NANSHA, GUANGZHOU CITY, CN

Sample Name : PC+ABS  
Model No : C1200HF (SABIC)

The above sample(s) and information were provided by the client.

SGS Job No. : SP24 - 018992 - SH

Date of Sample Received : 26 Feb 2024

Testing Period : 26 Feb 2024 - 07 Mar 2024

Test Requested : As requested by client, SVHC screening is performed according to:

- (i) Two hundred and twenty-three (233) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Jan 17, 2023 regarding Regulation (EC) No 1907/2006 concerning the REACH.
  - (ii) Based on the WTO notification of June 1, 2021, for a potential substance of high concern (SVHC)
  - (iii) Based on the potential high concern substances released by the European Chemical Administration as of February 17, 2023
- Inquiry list (according to REACH Regulation 1907/2006 of the European Union) for two substances of high concern (SVHC) Perform screening testing.

Test Results : See the continuation page.

Test Results : See the continuation page.

Summary :

According to the specified scope and evaluation screening, the test results of SVHC are ≤ 0.1% (w/w) in the submitted sample.	PASS
--	------



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## Test Report

(SVHC)

Signed for and on behalf of  
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

No. SHAEC2401833206

Date: 07 Mar 2024

Page 2 of 21



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Sue Sheng  
Approved Signatory



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## Test Report (SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 3 of 21

### Remark :

1. The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA: <http://echa.europa.eu/web/guest/candidate-list-table>

These lists are under evaluation by ECHA and may subject to change in the future.

2. REACH obligation:

- 2.1 Concerning article(s):

Communication:

Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

Notification:

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

SGS adopts the ruling of the Court of Justice of the European Union on the definition of an article under REACH unless indicated otherwise. Detail explanation is available at the following link:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

2.2 Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

2.3 Concerning substance and preparation:

If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety



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**Test Report  
(SVHC)**

No. SHAEC2401833206

Date: 07 Mar 2024

Page 4 of 21

Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
- a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
  - (a) a substance posing human health or environmental hazards in an individual concentration of  $\geq 1\%$  by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or  $\geq 0.2\%$  by volume for gaseous mixtures; or
  - (b) a substance that is PBT, or vPvB in an individual concentration of  $\geq 0.1\%$  by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
  - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of  $\geq 0.1\%$  by weight for non-gaseous mixtures; or
  - (d) a substance for which there are Europe-wide workplace exposure limits.

3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

**Test Sample :**Sample Description :

Specimen No.	SGS Sample ID	Description
-----------------	------------------	-------------

SN1	SHA24-018332.003	White plastic granule
-----	------------------	-----------------------

**Test Method :**

SGS In-House method-SHTC-CHEM-SOP-97-T, SHTC-CHEM-SOP-302-T, Analyzed by ICP-OES, UV-VIS, GC-MS, HPLC-DAD/MS and Colorimetric Method.



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Test Report  
(SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 5 of 21

## Test Result: (Substances in the Candidate List of SVHC)

Batch	Substance Name	CAS No.	003 Concentration (%)	RL (%)
-	All tested SVHC in candidate list	-	ND	-



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编写:	受控日期:
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**Test Report  
(SVHC)**

No. SHAEC2401833206

Date: 07 Mar 2024

Page 6 of 21

## Notes :

- (1) The table above only shows detected SVHC, and SVHC that below RL are not reported. Please refer to Appendix for the full list of tested SVHC.
- (2) RL = Reporting Limit (Test data will be shown if it  $\geq$  RL. RL is not regulatory limit.)  
ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
- (3) \* The test result is based on the calculation of selected element(s) and to the worst-case scenario.  
\*\* The test result is based on the calculation of selected marker(s) and to the worst-case scenario.  
For detail information, please refer to the SGS REACH website:

<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>

Calculated concentration of boric compounds are based on the total boron for liquid, powder and paste samples and water extractive boron for other samples by ICP-OES.

RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, chromium (VI), aluminum, zirconium, boron, strontium, zinc, antimony, titanium, barium and cadmium respectively), except molybdenum  
RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).

- (4) § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1)  $\geq$  0.1% (w/w).



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## Test Report

(SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 7 of 21

## Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
I	1	4,4' -Diaminodiphenylmethane(MDA)	101-77-9	0.050
I	2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	0.050
I	3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.050
I	4	Anthracene	120-12-7	0.050
I	5	Benzyl butyl phthalate (BBP)	85-68-7	0.050
I	6	Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	0.050
I	7	Bis(tributyltin)oxide (TBTO)	56-35-9	0.050
I	8	Cobalt dichloride*	7646-79-9	0.005
I	9	Diarsenic pentaoxide*	1303-28-2	0.005
I	10	Diarsenic trioxide*	1327-53-3	0.005
I	11	Dibutyl phthalate (DBP)	84-74-2	0.050
I	12	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD)	-	0.050
I	13	Lead hydrogen arsenate*	7784-40-9	0.005
I	14	Sodium dichromate*	7789-12-0, 10588-01-9	0.005
I	15	Triethyl arsenate*	15606-95-8	0.005
II	16	2,4-Dinitrotoluene	121-14-2	0.050
II	17	Acrylamide	79-06-1	0.050
II	18	Anthracene oil**	90640-80-5	0.050
II	19	Anthracene oil, anthracene paste**	90640-81-6	0.050
II	20	Anthracene oil, anthracene paste, anthracene fraction**	91995-15-2	0.050



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## Test Report

(SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 8 of 21

## Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
II	21	Anthracene oil, anthracene paste, distn. lights**	91995-17-4	0.050
II	22	Anthracene oil, anthracene-low**	90640-82-7	0.050
II	23	Diisobutyl phthalate	84-69-5	0.050
II	24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	0.005
II	25	Lead chromate*	7758-97-6	0.005
II	26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	0.005
II	27	Pitch, coal tar, high temp.**	65996-93-2	0.050
II	28	Tris(2-chloroethyl)phosphate	115-96-8	0.050
III	29	Ammonium dichromate*	7789-09-5	0.005
III	30	Boric acid*	-	0.005
III	31	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	Potassium chromate*	7789-00-6	0.005
III	33	Potassium dichromate*	7778-50-9	0.005
III	34	Sodium chromate*	7775-11-3	0.005
III	35	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	0.005
III	36	Trichloroethylene	79-01-6	0.050
IV	37	2-Ethoxyethanol	110-80-5	0.050
IV	38	2-Methoxyethanol	109-86-4	0.050
IV	39	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	-	0.005



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## Test Report

(SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 9 of 21

## Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
IV	40	Chromium trioxide*	1333-82-0	0.005
IV	41	Cobalt(II) carbonate*	513-79-1	0.005
IV	42	Cobalt(II) diacetate*	71-48-7	0.005
IV	43	Cobalt(II) dinitrate*	10141-05-6	0.005
IV	44	Cobalt(II) sulphate*	10124-43-3	0.005
V	45	1,2,3-trichloropropane	96-18-4	0.050
V	46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	0.050
V	47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	0.050
V	48	1-methyl-2-pyrrolidone	872-50-4	0.050
V	49	2-ethoxyethyl acetate	111-15-9	0.050
V	50	Hydrazine	7803-57-8, 302-01-2	0.050
V	51	Strontium chromate*	7789-06-2	0.005
VI	52	1,2-Dichloroethane	107-06-2	0.050
VI	53	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.050
VI	54	2-Methoxyaniline; o-Anisidine	90-04-0	0.050
VI	55	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.050
VI	56	Aluminosilicate Refractory Ceramic Fibres *	-	0.005
VI	57	Arsenic acid*	7778-39-4	0.005
VI	58	Bis(2-methoxyethyl) ether	111-96-6	0.050
VI	59	Bis(2-methoxyethyl) phthalate	117-82-8	0.050



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编写: 徐瑜欣	受控日期: 2024.11.30



## Test Report (SVHC)

### Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VI	60	Calcium arsenate*	7778-44-1	0.005
VI	61	Dichromium tris(chromate)*	24613-89-6	0.005
VI	62	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	0.050
VI	63	Lead diazide, Lead azide*	13424-46-9	0.005
VI	64	Lead dipicrate*	6477-64-1	0.005
VI	65	Lead styphnate*	15245-44-0	0.005
VI	66	N,N-dimethylacetamide	127-19-5	0.050
VI	67	Pentazinc chromate octahydroxide*	49663-84-5	0.005
VI	68	Phenolphthalein	77-09-8	0.050
VI	69	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	0.005
VI	70	Trilead diarsenate*	3687-31-8	0.005
VI	71	Zirconia Aluminosilicate Refractory Ceramic Fibres*	-	0.005
VII	72	[4-[[4-amino-1-naphthy][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	0.050
VII	73	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)§	548-62-9	0.050
VII	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.050
VII	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	0.050
VII	76	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	0.050
VII	77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol§	561-41-1	0.050
VII	78	Diboron trioxide*	1303-86-2	0.005



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## Test Report

(SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 11 of 21

## Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VII	79	Formamide	75-12-7	0.050
VII	80	Lead(II) bis(methanesulfonate)*	17570-76-2	0.005
VII	81	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.050
VII	82	TGIC (1,3,5-tris (oxiranylmethyl) -1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	0.050
VII	83	$\alpha,\alpha$ -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	6786-83-0	0.050
VII	84	$\beta$ -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.050
VIII	85	[Phthalato(2-)]dioxotrilead*	69011-06-9	0.005
VIII	86	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.050
VIII	87	1,2-Diethoxyethane	629-14-1	0.050
VIII	88	1-Bromopropane	106-94-5	0.050
VIII	89	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.050
VIII	90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	0.050
VIII	91	4,4'-Methylenedi-o-toluidine	838-88-0	0.050
VIII	92	4,4'-Oxydianiline and its salts	101-80-4	0.050
VIII	93	4-Aminoazobenzene	60-09-3	0.050
VIII	94	4-Methyl-m-phenylenediamine	95-80-7	0.050
VIII	95	4-Nonylphenol, branched and linear	-	0.050
VIII	96	6-Methoxy-m-toluidine	120-71-8	0.050
VIII	97	Acetic acid, lead salt, basic*	51404-69-4	0.005



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## Test Report (SVHC)

### Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	98	Biphenyl-4-ylamine	92-67-1	0.050
VIII	99	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.050
VIII	100	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	-	0.050
VIII	101	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.050
VIII	102	Dibutyltin dichloride (DBTC)	683-18-1	0.050
VIII	103	Diethyl sulphate	64-67-5	0.050
VIII	104	Diisopentylphthalate	605-50-5	0.050
VIII	105	Dimethyl sulphate	77-78-1	0.050
VIII	106	Dinoseb	88-85-7	0.050
VIII	107	Dioxobis(stearato)trilead*	12578-12-0	0.005
VIII	108	Fatty acids, C16-18, lead salts*	91031-62-8	0.005
VIII	109	Furan	110-00-9	0.050
VIII	110	Henicosfluoroundecanoic acid	2058-94-8	0.050
VIII	111	Heptacosfluorotetradecanoic acid	376-06-7	0.050
VIII	112	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	-	0.050
VIII	113	Lead bis(tetrafluoroborate)*	13814-96-5	0.005
VIII	114	Lead cyanamidate*	20837-86-9	0.005
VIII	115	Lead dinitrate*	10099-74-8	0.005
VIII	116	Lead monoxide*	1317-36-8	0.005



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## Test Report

(SVHC)

## Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	117	Lead oxide sulfate*	12036-76-9	0.005
VIII	118	Lead tetroxide (orange lead)*	1314-41-6	0.005
VIII	119	Lead titanium trioxide*	12060-00-3	0.005
VIII	120	Lead titanium zirconium oxide*	12626-81-2	0.005
VIII	121	Methoxyacetic acid	625-45-6	0.050
VIII	122	Methyloxirane (Propylene oxide)	75-56-9	0.050
VIII	123	N,N-dimethylformamide	68-12-2	0.050
VIII	124	N-Methylacetamide	79-16-3	0.050
VIII	125	N-Pentyl-isopentylphthalate	776297-69-9	0.050
VIII	126	o-Aminoazotoluene	97-56-3	0.050
VIII	127	o-Toluidine	95-53-4	0.050
VIII	128	Pentacosfluorotridecanoic acid	72629-94-8	0.050
VIII	129	Pentalead tetraoxide sulphate*	12065-90-6	0.005
VIII	130	Pyrochlore, antimony lead yellow*	8012-00-8	0.005
VIII	131	Silicic acid, barium salt, lead-doped*	68784-75-8	0.005
VIII	132	Silicic acid, lead salt*	11120-22-2	0.005
VIII	133	Sulfurous acid, lead salt, dibasic*	62229-08-7	0.005
VIII	134	Tetraethyllead*	78-00-2	0.005
VIII	135	Tetralead trioxide sulphate*	12202-17-4	0.005
VIII	136	Tricosfluorododecanoic acid	307-55-1	0.050
VIII	137	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	0.005



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## Test Report (SVHC)

### Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
VIII	138	Trilead dioxide phosphonate*	12141-20-7	0.005
IX	139	4-Nonylphenol, branched and linear, ethoxylated	-	0.050
IX	140	Ammonium pentadecafluorooctanoate (APFO)**	3825-26-1	0.050
IX	141	Cadmium oxide*	1306-19-0	0.005
IX	142	Cadmium*	7440-43-9	0.005
IX	143	Dipentyl phthalate (DPP)	131-18-0	0.050
IX	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.050
X	145	Cadmium sulphide*	1306-23-6	0.005
X	146	Dihexyl phthalate	84-75-3	0.050
X	147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)] bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	0.050
X	148	Disodium 4-amino-3-[[4'-(2,4-diaminophenyl)azo] [1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	0.050
X	149	Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	0.050
X	150	Lead di(acetate)*	301-04-2	0.005
X	151	Trixylyl phosphate	25155-23-1	0.050
XI	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.050
XI	153	Cadmium chloride*	10108-64-2	0.005
XI	154	Sodium perborate; perboric acid, sodium salt*	-	0.005
XI	155	Sodium peroxometaborate*	7632-04-4	0.005
XII	156	2- (2H-benzotriazol-2-yl) -4,6-ditertpentylphenol (UV-328)	25973-55-1	0.050



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## Test Report (SVHC)

### Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XII	157	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.050
XII	158	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	0.050
XII	159	Cadmium fluoride*	7790-79-6	0.005
XII	160	Cadmium sulphate*	10124-36-4,31119-53-6	0.005
XII	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate & 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE & MOTE)	-	0.050
XIII	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	-	0.050
XIII	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	-	0.050
XIV	164	1,3-propanesultone	1120-71-4	0.050
XIV	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl) phenol (UV-327)	3864-99-1	0.050
XIV	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	0.050
XIV	167	Nitrobenzene	98-95-3	0.050
XIV	168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	-	0.050
XV	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	0.050
XVI	170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	0.050



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## Test Report (SVHC)

### Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XVI	171	4-Heptylphenol, branched and linear	-	0.050
XVI	172	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	-	0.050
XVI	173	p-(1,1-dimethylpropyl)phenol	80-46-6	0.050
XVII	174	Perfluorohexane-1-sulphonic acid and its salts	-	0.050
XVIII	175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16.9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus™") [covering any of its individual anti- and syn-isomers or any combination thereof]	-	0.050
XVIII	176	Benz[a]anthracene	56-55-3	0.050
XVIII	177	Cadmium nitrate*	10325-94-7	0.005
XVIII	178	Cadmium carbonate*	513-78-0	0.005
XVIII	179	Cadmium hydroxide*	21041-95-2	0.005
XVIII	180	Chrysene	218-01-9	0.050
XVIII	181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	0.050
XIX	182	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride)	552-30-7	0.050
XIX	183	Benzo[ghi]perylene	191-24-2	0.050
XIX	184	Decamethylcyclopentasiloxane (D5)	541-02-6	0.050
XIX	185	Dicyclohexyl phthalate (DCHP)	84-61-7	0.050
XIX	186	Disodium octaborate*	12008-41-2	0.005
XIX	187	Dodecamethylcyclohexasiloxane (D6)	540-97-6	0.050
XIX	188	Ethylenediamine (EDA)	107-15-3	0.050



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## Test Report

(SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 17 of 21

## Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL (%)
XIX	189	Lead*	7439-92-1	0.005
XIX	190	Octamethylcyclotetrasiloxane (D4)	556-67-2	0.050
XIX	191	Terphenyl, hydrogenated	61788-32-7	0.050
XX	192	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	15087-24-8	0.050
XX	193	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	0.050
XX	194	Benzo[k]fluoranthene	207-08-9	0.050
XX	195	Fluoranthene	206-44-0	0.050
XX	196	Phenanthrene	85-01-8	0.050
XX	197	Pyrene	129-00-0	0.050
XXI	198	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	-	0.050
XXI	199	2-methoxyethyl acetate	110-49-6	0.050
XXI	200	4-tert-butylphenol (PTBP)	98-54-4	0.050
XXI	201	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	-	0.050
XXII	202	2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	119313-12-1	0.050
XXII	203	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	71868-10-5	0.050
XXII	204	Diisohexyl phthalate	71850-09-4	0.050
XXII	205	Perfluorobutane sulfonic acid (PFBS) and its salts	-	0.050
XXIII	206	1-vinylimidazole	1072-63-5	0.050

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## Test Report

(SVHC)

## Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL(%)
XXIII	207	2-methylimidazole	693-98-1	0.050
XXIII	208	butyl4-hydroxybenzoate	94-26-8	0.050
XXIII	209	Dibutylbis(pentan e-2,4-dionato-O,O')tin	22673-19-4	0.005
XXIV	210	bis(2-(2-methoxyethoxy)ethyl) ether	143-24-8	0.005
XXIV	211	Diocetyl tin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	-	0.005
XXV	212	2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers	-	0.050
XXV	213	Orthoboric acid, sodium salt (*2) (*5)	13840-56-7	0.005
XXV	214	2,2-bis(bromomethyl)propane1,3-diol (BMP) 2,2-dimethylpropan-1-ol, tribromo derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA) 2,3-dibromo-1-propanol (2,3-DBPA)	3296-90-0 36483-57-5 1522-92-5 96-13-9	0.005
XXV	215	Glutaral	-	0.005
XXV	216	Medium-chain chlorinated paraffins (MCCP) [UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14 to C17]	-	0.005
XXV	217	Phenol, alkylation products (mainly in para position) with C12-rich branched or linear alkyl chains from oligomerisation, covering any individual isomers and/or combinations thereof (PDDP)	-	0.005



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## Test Report

(SVHC)

No. SHAEC2401833206

Date: 07 Mar 2024

Page 19 of 21

## Appendix

Full list of tested SVHC:

Batch	No.	Substance Name	CAS No.	RL(%)
XXV	218	1,4-dioxane	123-91-1	0.050
XXV	219	4,4'-(1-methylpropylidene)bisphenol	77-40-7	0.050
XXVI	220	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)	119-47-1	0.050
XXVI	221	tris(2-methoxyethoxy)vinylsilane	1067-53-4	0.050
XXVI	222	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC)	-	0.050
XXVI	223	S-(tricyclo[5.2.1.0 <sup>2,6</sup> ]deca-3-en-8(or 9-yl) O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate	255881-94-8	0.050
-	224	Resorcinol	108-46-3	0.050
XXVIII	225	1,1'-[ethane-1,2-diylbisoxyl]bis[2,4,6-tribromobenzene]	37853-59-1	0.050
XXVIII	226	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol	79-94-7	0.050
XXVIII	227	4,4'-sulphonyldiphenol	80-09-1	0.050
XXVIII	228	Barium diboron tetraoxide	13701-59-2	0.050
XXVIII	229	bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof	-	0.050
XXVIII	230	Isobutyl 4-hydroxybenzoate	4247-02-3	0.050
XXVIII	231	Melamine	108-78-1	0.050
XXVIII	232	Perfluoroheptanoic acid and its salts	-	0.050
XXVIII	233	reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine	-	0.050
XXIX	234	Bis(4-chlorophenyl) sulphone	80-07-9	0.050
XXIX	235	Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	0.050
XXIX	236	resorcinol	108-46-3	0.050



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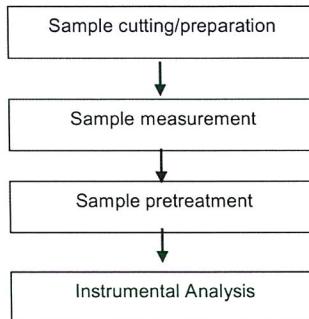
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(SVHC)  
ATTACHMENTS**

No. SHAEC2401833206

Date: 07 Mar 2024

Page 20 of 21

**SVHC Testing Flow Chart**



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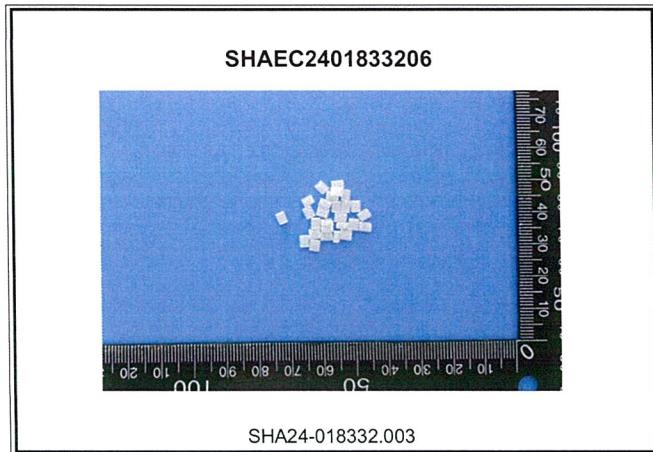
Test Report  
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Page 21 of 21

Sample photo:



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## Raw Material Data Sheet (RMDS)

### CYCOLOY™ C1200HF resin

Polycarbonate + ABS

SABIC Innovative Plastics

#### 产品说明

PC+ABS, excellent flow/impact/high heat resistance. Low temperature ductility. For automotive, appliance and electrical components.

#### 基本信息

黄卡信息	E121562-221028		
特性	抗撞击性,良好	良好的流动性	耐热性,高
用途	电气/电子应用领域	家电部件	汽车领域的应用
加工方法	注射成型		
多点数据	Coefficient of Thermal Expansion (ASTM D696)   Elastomer Temperature (ASTM D696)   Impact (Load) (ASTM D256)   Volume-Temperature (PVT - Shear DMA (ASTM D4065)   Specific Heat vs. Temperature (ASTM D287)   Tensile Stress vs. Strain (ASTM D638)   Thermal Conductivity vs. Temperature   Viscosity vs. Shear Rate (ASTM D3835)		

#### 物理性能

	额定值	单位制	测试方法
比重	1.15	g/cm³	ASTM D792
熔流率(熔体流动速率) (260°C/5.0 kg)	19	g/10 min	ASTM D1238
溶化体积流率(MVR) (265°C/5.0 kg)	24.0	cm³/10min	ISO 1133
收缩率 - 流动 (3.20 mm)	0.50 到 0.70	%	内部方法

#### 机械性能

	额定值	单位制	测试方法
拉伸模量			
.. <sup>1</sup>	2280	MPa	ASTM D638
--	2370	MPa	ISO 527-2/1
抗张强度			
屈服 <sup>2</sup>	57.2	MPa	ASTM D638
屈服	55.0	MPa	ISO 527-2/50
伸长率			
屈服 <sup>3</sup>	5.0	%	ASTM D638
屈服	4.8	%	ISO 527-2/50
断裂 <sup>4</sup>	150	%	ASTM D638
断裂	110	%	ISO 527-2/50
弯曲模量			
50.0 mm 跨距 <sup>5</sup>	2340	MPa	ASTM D790
--	2250	MPa	ISO 178
弯曲应力			
--	86.0	MPa	ISO 178
屈服, 50.0 mm 跨距 <sup>6</sup>	88.3	MPa	ASTM D790
冲击性能	额定值	单位制	测试方法

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悬垂梁缺口冲击强度			
	额定值	单位制	测试方法
-30°C	480	J/m	ASTM D256
23°C	590	J/m	ASTM D256
-30°C <sup>7</sup>	34	kJ/m <sup>2</sup>	ISO 180/1A
23°C <sup>8</sup>	49	kJ/m <sup>2</sup>	ISO 180/1A
装有测量仪表的落镖冲击			ASTM D3763
-30°C, Total Energy	54.2	J	ASTM D3763
23°C, Total Energy	54.2	J	ASTM D3763
热性能	额定值	单位制	测试方法
载荷下热变形温度			
0.45 MPa, 未退火, 3.20 mm	129	°C	ASTM D648
0.45 MPa, 未退火, 64.0 mm 跨距 <sup>9</sup>	130	°C	ISO 75-2/Bf
1.8 MPa, 未退火, 3.20 mm	113	°C	ASTM D648
1.8 MPa, 未退火, 64.0 mm 跨距 <sup>10</sup>	110	°C	ISO 75-2/Af
维卡软化温度	130	°C	ISO 306/B50
线形热膨胀系数 - 流动 (-40 到 40°C)	7.2E-5	cm/cm/°C	ASTM E831
RTI Elec	105	°C	UL 746
RTI Imp	80.0	°C	UL 746
RTI	105	°C	UL 746
电气性能	额定值	单位制	测试方法
相比耐漏电起痕指数(CTI)	PLC 2		UL 746
高电弧燃烧指数(HAI)	PLC 1		UL 746
热丝引燃 (HWI)	PLC 3		UL 746
可燃性	额定值	单位制	测试方法
UL 阻燃等级 (1.19 mm)	HB		UL 94
注射	额定值	单位制	
干燥温度	100 到 110	°C	
干燥时间	3.0 到 4.0	hr	
干燥时间,最大	8.0	hr	
建议的最大水分含量	0.020	%	
建议注射量	30 到 80	%	
料斗温度	60.0 到 80.0	°C	
料筒后部温度	250 到 290	°C	
料筒中部温度	255 到 295	°C	
料筒前部温度	260 到 300	°C	
射嘴温度	275 到 300	°C	
加工(熔体)温度	275 到 300	°C	
模具温度	60.0 到 90.0	°C	
背压	0.300 到 0.700	MPa	
螺杆转速	40 到 70	rpm	
排气孔深度	0.038 到 0.076	mm	
备注			

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Page 2

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- |     |                 |
|-----|-----------------|
| 1.  | 50 mm/min       |
| 2.  | 类型 1, 50 mm/min |
| 3.  | 类型 1, 50 mm/min |
| 4.  | 类型 1, 50 mm/min |
| 5.  | 1.3 mm/min      |
| 6.  | 1.3 mm/min      |
| 7.  | 80*10*4mm, Cut  |
| 8.  | 80*10*4mm, Cut  |
| 9.  | 80*10*4 mm      |
| 10. | 80*10*4 mm      |