

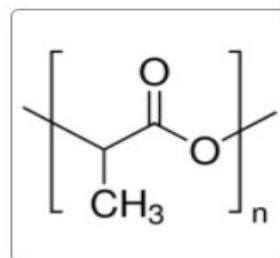
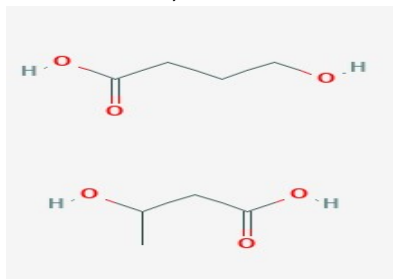
## Safety Data Sheet

### PLA/PHA Film Grade Products

#### Section1-Identification of the substance and of the company/undertaking

##### 1.1 Product identifier

|                    |                                                                                                                      |
|--------------------|----------------------------------------------------------------------------------------------------------------------|
| Trade name         | <b>CA1270P</b> (Film Grade Product),<br><b>CA1270PF</b> (Film Grade Product)<br><b>CA1240PF</b> (Film Grade Product) |
| Substance name     | Poly(3-hydroxybutyrate-co-4-hydroxybutyrate),<br>Polylactide                                                         |
| CAS No.            | : 125495-90-1, 9051-89-2                                                                                             |
| Chemical structure |                                                                                                                      |



Poly(3-hydroxybutyrate-co-4-hydroxybutyrate)  
Polylactic acid

##### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**1.2.1 Relevant identified uses** : Applications requiring bio content and/or composting/biodegradability

##### 1.2.2 No additional information available

No additional information available

##### 1.3 Details of the supplier of the safety data sheet

**Manufacturer** CJ CHEILJEDANG CORPORATION  
330, Dongho-ro, Jung-Gu, Seoul - Korea

##### 1.4 Emergency telephone number

**Emergency number** :82-2- 6740-1137, 82-31-8099-2353

#### Section2-Hazards identification

##### 2.1 Hazards

##### 2.1.1 Classification of the substance or mixture

Flammability GHS Category 4-Slight hazard



Revision Date: June 22, 2023

Revision Number: 1

Not considered a hazardous substance or mixture  
Not considered hazardous according to OSHA  
Not considered hazardous according to EC Directives 67/548/EEC or 1999/45/EC and their valid adaptation and derived national regulation

#### **2.1.2 GHS Label elements, including precautionary statements**

Not relative as material is not a hazardous substance or mixture

#### **2.1.3 Hazards not otherwise classified (HNOC) or not covered by GHS**

Will not ignite by friction  
Slightly flammable if subjected to open flame (see sec. 16, additional information)

### **2.2 Potential Health Effects**

**Eye** : May cause eye irritation  
**Skin** : May cause skin irritation. Under normal processing conditions at elevated temperature, contact with molten material can cause thermal burns  
**Ingestion** : May be harmful if swallowed  
**Inhalation** : Dust from processing may cause irritation of the respiratory system

### **Section 3 - Information on Ingredients**

Polyhydroxyalkanoate (P3HB4HB) CAS# 125495-90-1

Poly(lactide) (PLA) CAS# 9051-89-2

### **Section 4 – First Aid Measures**

**Eye** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid  
**Skin** : Wash off with soap and water  
**Ingestion** : Get medical aid immediately. Do not induce vomiting without medical advice  
**Inhalation** : Heating resin above the recommended processing range, or 220 °C will produce toxic fumes. Remove the victim from exposure area to fresh air immediately. Give oxygen if breathing is difficult. Get medical aid. Give artificial respiration if not breathing.  
**Notes to Physician** : Treat symptomatically and supportively.

### **Section 5 – Fire Fighting Measure**

**Extinguishing Media** : Use water spray, dry chemical, carbon dioxide, or chemical foam

**Flash Point** : Not determined

**Auto-ignition Temp.** : Not determined

#### **Hazardous Combustion Product**

: carbon dioxide, carbon monoxide

#### **Special Protective Actions for fire-fighters**

: Wear a self-contained breathing apparatus in pressure-demand mode, MSHA/NIOSH (approved or equivalent), and full protective gear



Revision Date: June 22, 2023

Revision Number: 1

## Section6– Accidental Release Measures

### **Non-emergency personnel**

: Use personal protective equipment as indicated in Section 8. Ventilate area

### **Spills / Leaks**

: Sweep up pellets. Vacuum fines, or dusts, using a combustible-dust vacuum

### **For emergency responders**

:Some as above for non-emergency personals

## Section7– Handling and Storage

### **Handling**

: Good industrial practices in housekeeping and personal hygiene should be followed. Minimize dust. Maintain operating temperature within the recommended processing range. Avoid contact with molten material and provide adequate ventilation during processing. When mechanical energy is used to process, or transfer, the materials, fines or dust can be generated. Systems and procedures should be designed to minimize the generation and accumulation of dust from the handling and processing of a mixed resin of PHA and PLA. Refer to NFPA pamphlet 654: Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, processing, handling of Combustible Particulate Solids.

### **Storage**

: A mixed resin of PHA and PLA has good storage stability, but extremes of temperature and humidity should be avoided to prevent property deterioration. The recommended maximum shelf life is two years. Resin should be stored in original shipping package. Keep the resin dry and sealed to exclude moisture. Store below 27 °C (80 °F) to maximize product shelf life.

## Section8– Exposure controls /Personal Protection

### **8.1 Control Parameters**

#### **OSHA Vacated PELs**

: No OSHA Vacated PELs are listed for this chemical

#### **Engineering Controls**

: Provided good general ventilation with additional local ventilation where the hot polymer may reside for long periods (leak areas, above the nozzle or die, in screen changers, in vent ports, etc.). Heating resin above recommended processing conditions or 220 °C will produce toxic fumes.

### **8.2 Personal Protective Equipment**

#### **Eyes**

: Wear appropriate protective eyeglasses described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

#### **Skin**

: Hot polymers can cause thermal burns. Wear impervious clothing and insulated gloves where exposure to molten polymer is possible.

#### **Respirators**

: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN

149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if there is potential for exposure to dust or toxic fumes, or if irritation or other symptoms are experienced.

#### Section9– Physical and Chemical Properties

|                                                       |                                                        |
|-------------------------------------------------------|--------------------------------------------------------|
| <b>Appearance</b>                                     | : Off-white solid pellets                              |
| <b>Odor</b>                                           | : mild                                                 |
| <b>Odor threshold</b>                                 | : not determined                                       |
| <b>pH</b>                                             | : not applicable                                       |
| <b>Melting Point</b>                                  | : 100 °C-190 °C (212 °F to 374 °F)                     |
| <b>Freezing Point</b>                                 | : not applicable                                       |
| <b>Boiling Point</b>                                  | : not applicable                                       |
| <b>Flash Point</b>                                    | : not determined                                       |
| <b>Evaporation rate</b>                               | : not determined                                       |
| <b>Vapor Pressure</b>                                 | : not determined                                       |
| <b>Vapor Density</b>                                  | : not determined                                       |
| <b>Viscosity</b>                                      | : not available                                        |
| <b>Flammability</b>                                   | : data not available                                   |
| <b>Upper / lower flammability or explosive limits</b> | : (min. explosible concentration) 160 g/m <sup>3</sup> |
| <b>Vapor Pressure</b>                                 | : not determined                                       |
| <b>Vapor Density</b>                                  | : not determined                                       |
| <b>Density</b>                                        | : 1.1-1.3 g/cm <sup>3</sup>                            |
| <b>Solubility</b>                                     | : soluble in chloroform, methylene chloride,           |
| <b>Partition coefficient</b>                          | : not determined                                       |
| <b>Auto-ignition Temperature</b>                      | : not determined                                       |
| <b>Decomposition Temperature</b>                      | : above 220 °C (428 °F)                                |
| <b>Viscosity</b>                                      | : not applicable-solid                                 |
| <b>Molecular Weight</b>                               | : approximately >100,000 (by GPC)                      |

#### Section10– Stability and Reactivity

|                                          |                                                                 |
|------------------------------------------|-----------------------------------------------------------------|
| <b>Reactivity</b>                        | : not known to be reactive                                      |
| <b>Chemical Stability</b>                | : stable under recommended storage conditions.<br>See section 7 |
| <b>Possibility of Hazardous Reaction</b> | : hazardous polymerization will not occur                       |
| <b>Conditions to Avoid</b>               | : incompatible materials, excess heat, flames, ignition sources |
| <b>Incompatible materials</b>            | : strong oxidizing agents, strong acids                         |
| <b>Hazardous Decomposition</b>           | : carbon monoxide, carbon dioxide, crotonic acid                |

#### Section11– Toxicological Information

|                                        |                                            |
|----------------------------------------|--------------------------------------------|
| <b>Acute toxicity</b>                  | : Category 5 (dermal)                      |
| <b>Skin Corrosion / irritation</b>     | : Classified as a mild sensitizer for skin |
| <b>Serious Eye Damage / irritation</b> | : not classified                           |



Revision Date: June 22, 2023

Revision Number: 1

|                                          |                                                                                                                                               |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Respiratory or Skin Sensitization</b> | : no information available                                                                                                                    |
| <b>Mutagenicity</b>                      | : no information available                                                                                                                    |
|                                          | : Negative on in vitro bacterial reverse mutation, Negative on in vitro mammalian gene mutation and Negative on in vivo chromosome aberration |
| <b>Carcinogenicity</b>                   | : no information available                                                                                                                    |
| <b>Reproductive toxicity</b>             | : no information available                                                                                                                    |
| <b>STOT-single exposure</b>              | : no information available                                                                                                                    |
| <b>STOT-repeated exposure</b>            | : no information available                                                                                                                    |
| <b>Aspiration hazard</b>                 |                                                                                                                                               |

## Section 12 – Ecological Information

- 12.1 Ecological Toxicity** Not considered toxic in marine, fresh water and soil environments
- 12.2 Persistence & Degradability** Product will biodegrade in industrial and home compost conditions
- 12.3. Bioaccumulation** Not expected to bioconcentrate or bioaccumulate.
- 12.4. Mobility in soil** No data available
- 12.5. Other adverse effects** No information available

## Section 13 – Disposal Considerations

Waste from residues / unused products: In accordance with local and national Regulations. Product is bio-based, non-hazardous and compostable.

Should not be released into the environment

Contaminated packaging: Empty remaining contents Do not re-use empty containers. Empty containers should be transported/delivered using a registered waste carrier to local recyclers for disposal.

## Section 14 – Transport Information

U.S. Department of Transportation (DOT):

Proper shipping name: None

Hazard class: Not regulated

UN-No: None

Packing group: None

Hazardous Substances RQs: None

IMDG:

Proper shipping name: None

Hazard class: Not regulated

UN/Id No.: None

Packing group: None



Revision Date: June 22, 2023

Revision Number: 1

ICAO/IATA:

Proper shipping name: None

Hazard Class: Not regulated

UN-No.: None

Packing group: None

## **Section 15. Regulatory Information**

(not meant to be all inclusive - selective regulations represented)

Regulatory requirements are subject to change and may differ between locations. It is the User's responsibility to ensure that all activities comply with all federal, state or provincial and local laws and regulations.

### **U.S. REGULATIONS**

TSCA: Listed

California Proposition 65: Not Listed

EU REACH: Exemption

China regulations IECSC GB4806.6-2016: Listed

Japan regulations : Listed

Korea REACH: Exemption

### **Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List

### **Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule

### **Section 12b**

None of the chemicals are listed under TSCA Section 12b

### **Section 313**

No chemicals are reportable under Section 313

### **Clean Air Act:**

This material does not contain any hazardous air pollutants

### **Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substance under the CWA

None of the chemicals in this product are listed as Priority Pollutants under the CWA

None of the chemicals in this product are listed as Toxic Pollutants under the CWA

### **OSHA**

None of the chemicals in this product are considered highly hazardous by OSHA

### **California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

### **EUROPEAN UNION**

Not considered hazardous according to EC Directives 67/548/EEC or 1999/45/EC and their valid



Revision Date: June 22, 2023

Revision Number: 1

adaptations and derived national regulations  
European labeling in Accordance with EC Directives

### **CANADIAN REGULATIONS**

Canada -DSL

CAS# 125495-90-1

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

Canada -NDSL

CAS# 9051-89-2

Substances on the list still require notification under the New Substances Notification Regulations (Chemicals and Polymers) so that health and ecological risks can be assessed before the substance is manufactured or imported into Canada above threshold quantities, however they are subject to fewer information requirements and higher thresholds for reporting.

### **Section16 – Additional Information**

**Product Name: PHACT CA1270P, CA1270PF and CA1240PF**

**HMIS Classification (estimated)**

**Health hazard: 0**

**Physical hazards: 0**

**NFPA Rating (estimated)**

**Health hazard: 0**

**Fire: 1**

**Reactivity: 0**

NOTICE: Customer assumes all risk with respect to its use and handling of this resin and its marketing, sale and use of products made with CJ CHEILJEDANG biopolymers. CJ CHEILJEDANG liability for breach of warranty, negligence, or other claims is limited to the purchase price of materials purchased. CJ CHEILJEDANG will not be responsible for any indirect, consequential, special, or incidental damages. The information contained herein is believed to be reliable, but CJ CHEILJEDANG makes NO REPRESENTATIONS, GUARANTEES, OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

**PHACT**