

## Diamond Tool Bonding Frit – J FRIT

### 1. Product Description

J FRIT is a high-performance borosilicate-based bonding frit developed for diamond tool applications. It provides excellent diamond retention, controlled flow characteristics, and strong mechanical bonding, ensuring superior cutting performance and extended tool life.

### 2. Key Features

- Excellent diamond particle retention
- Controlled softening and flow behavior
- High bond strength and toughness
- Stable performance under high-speed cutting conditions
- Optimized wetting of diamond and metal matrix
- Reduced risk of segment cracking and premature wear

### 3. Typical Properties

Property	Value
Appearance	Clear to slightly opaque frit
Form	Granular / crushed
Bulk Density	0.6 – 0.7 g/cc
Hardness	Medium-soft
Softening Range	750 – 800°C
Fusion Temperature	820 – 870°C
Thermal Stability	Excellent
Chemical Resistance	Good

#### **4. Application Areas**

- Diamond cutting wheels
- Diamond segments
- Core drill bits
- Stone cutting blades (granite, marble, engineered stone)

#### **5. Recommended Processing Conditions**

Parameter	Range
Bond Formation Range	750 – 850°C
Peak Firing Temperature	800 – 870°C
Heating Rate	Controlled
Cooling	Gradual

#### **6. Packaging**

25 kg moisture-resistant HDPE bags. Jumbo bags available upon request.

#### **7. Storage & Handling**

Store in a dry and covered area. Avoid moisture exposure.

#### **8. Safety Information**

Use appropriate PPE such as dust mask and gloves during handling. Refer MSDS for detailed safety guidelines.

#### **9. Disclaimer**

Information is based on laboratory data and practical experience. Users should conduct trials to determine suitability for their application.

# Diamond Tool Bonding Frit – SB BOND

## 1. Product Description

SB BOND is a **high-strength borosilicate bonding frit** specially developed for **diamond tool applications requiring higher thermal resistance and stronger bond integrity**.

It offers **enhanced diamond retention, controlled flow at elevated temperatures, and improved mechanical strength**, making it ideal for demanding cutting applications.

## 2. Key Features

- Superior **diamond retention at higher temperatures**
- Higher **bond strength and structural integrity**
- Controlled **flow characteristics with reduced over-melting**
- Improved **wear resistance and durability**
- Stable performance under **heavy-duty cutting conditions**
- Reduced risk of **segment deformation and failure**

## 3. Typical Properties

Property	Value
Appearance	Clear to slightly opaque frit
Form	Granular / crushed
Bulk Density	0.7 – 0.8 g/cc
Hardness	Medium to medium-hard
Softening Range	780 – 830°C
Fusion Temperature	850 – 900°C
Thermal Stability	Excellent
Chemical Resistance	Good

## 4. Application Areas

- Diamond cutting blades (granite, hard stone)
- Heavy-duty diamond segments
- Core drill bits for hard materials
- High-performance stone cutting tools

## 5. Performance Benefits

- Longer **tool life due to stronger bonding**
- Improved **cutting stability in hard materials**
- Better **diamond holding under high load**
- Controlled **wear rate → consistent performance**
- Suitable for **high-speed and high-pressure operations**

## 6. Recommended Processing Conditions

Parameter	Range
Bond Formation Range	780 – 860°C
Peak Firing Temperature	850 – 900°C
Heating Rate	Controlled
Cooling	Gradual to avoid thermal stress

## 7. Compatibility

- Compatible with **metal powders and hybrid bonding systems**
- Suitable for **coarse and medium diamond grit sizes**
- Works effectively in **vitrified and semi-vitrified bonds**

## 8. Packaging

- 25 kg moisture-resistant HDPE bags
- Jumbo bags available on request

## 9. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure

## 10. Safety Information

- Non-hazardous under normal handling conditions
- Use appropriate **PPE (mask, gloves, goggles)**
- Refer to MSDS for detailed safety guidelines



## **11. Disclaimer**

The information provided is based on laboratory data and production experience. Actual performance may vary depending on processing conditions and application. Users are advised to conduct trials before commercial use.

## Crystalline Glaze Frit – Code 227

**Material Code:**

227

**Product Type:**

Transparent Glaze Frit

**Product Description**

Crystalline, needle-shaped **lead-free and lithium-free transparent glaze frit** in fine powder form.

The product is specially developed for applications requiring **high transparency, smooth surface finish, and consistent glaze performance.**

**Technical Characteristics**

Parameter	Typical Value
Appearance	White powder
Structure	Crystalline, needle-shaped
Transparency	High
Gloss	Excellent
Surface Finish	Smooth and uniform
Chemical Stability	Good
Thermal Stability	Good

**Application Areas**

- Crucibles and refractory components
- High-temperature ceramic applications
- Protective glaze coatings
- Industrial ceramic linings



## Performance Features

- Excellent **surface smoothness and gloss**
- High **transparency after firing**
- Uniform **glaze formation**
- Good **adhesion to ceramic substrates**
- Stable performance under **thermal cycling conditions**

## Recommended Processing Conditions

Parameter	Range
Application Form	Powder / slurry
Firing Temperature Range	850 – 950°C ( <i>depending on application</i> )
Heating Rate	Controlled
Cooling	Gradual

## Packaging

- 25 Kg HDPE Bags
- Jumbo Bags (on request)

## Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure

## Safety Information

- Lead-free and lithium-free formulation
- Non-hazardous under normal handling conditions
- Use appropriate PPE (mask, gloves) during handling

## Quality Assurance

Each batch is manufactured under controlled conditions and tested to ensure **consistent quality, performance, and compliance with internal standards.**



## **Disclaimer**

The information provided is based on laboratory data and production experience. Actual performance may vary depending on processing conditions and application. Users are advised to conduct trials before use.

## Abrasive Frit – 907

### Material Code:

907

### Product Type:

Vitrified Bonding Frit for Abrasive Applications

### Product Description

Frit 907 is a **medium-strength vitrified bonding frit** designed for **abrasive tool applications**. It offers a balanced combination of **bond strength, controlled flow, and thermal stability**, making it suitable for a wide range of grinding operations.

### Technical Characteristics

Parameter	Typical Value
Appearance	Clear to slightly hazy frit
Form	Granular / crushed
Hardness	Medium
Softening Range	780 – 820°C
Fusion Temperature	840 – 900°C
Thermal Stability	Good
Bond Strength	Medium to High
Wear Resistance	Good

### Application Areas

- Vitrified bonded grinding wheels
- General-purpose abrasive tools
- Medium-duty grinding applications
- Abrasive segments and bonded systems

### Performance Features

- Balanced **bond strength and toughness**
- Controlled **flow during firing**



- Good **adhesion with abrasive grains** ( $\text{Al}_2\text{O}_3$  / SiC)
- Stable performance under **continuous grinding conditions**
- Consistent **wheel structure and integrity**

### Recommended Processing Conditions

Parameter	Range
Bond Formation Range	780 – 840°C
Peak Firing Temperature	820 – 900°C
Heating Rate	Controlled
Cooling	Gradual

### Packaging

- 25 Kg HDPE Bags
- Jumbo Bags (on request)

### Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure

### Safety Information

- Non-hazardous under normal conditions
- Use appropriate PPE (mask, gloves) during handling

### Quality Assurance

Manufactured under controlled conditions and tested to ensure **consistent quality, performance, and batch-to-batch uniformity**.

### Disclaimer

The above data is based on laboratory testing and production experience. Actual performance may vary depending on application and process conditions. Users are advised to conduct trials before use.

## Crystalline Glaze Frit – Code 215

### Material Code:

215

### Product Type:

Transparent Glaze Frit

### Product Description

Crystalline, needle-shaped **lead-free and lithium-free transparent glaze frit** designed for applications requiring **low fusion temperature, high transparency, and smooth glaze formation.**

The product is optimized for **uniform melting and excellent surface finish.**

### Technical Characteristics

Parameter	Typical Value
Appearance	White powder
Structure	Crystalline, needle-shaped
Transparency	High
Gloss	Excellent
Softening Range	700 – 750°C
Fusion Behavior	Smooth and uniform
Thermal Stability	Good
Chemical Stability	Good

### Application Areas

- Crucibles and ceramic components
- Refractory glaze coatings
- Industrial ceramic linings
- Applications requiring **low temperature firing**



## Performance Features

- Low **fusion temperature** → **energy saving**
- Excellent **gloss and transparency**
- Uniform **surface finish**
- Good **adhesion to ceramic substrates**
- Stable performance in **thermal cycles**

## Recommended Processing Conditions

Parameter	Range
Application Form	Powder / slurry
Firing Temperature Range	700 – 800°C
Heating Rate	Controlled
Cooling	Gradual

## Packaging

- 25 Kg HDPE Bags
- Jumbo Bags (on request)

## Storage & Handling

- Store in **dry conditions**
- Avoid moisture exposure

## Safety Information

- Lead-free and lithium-free
- Use PPE (mask, gloves) during handling

## Disclaimer

Data is based on production experience. Users are advised to conduct trials before use.

## Crystalline Glaze Frit – Code 116/92

**Material Code:**

116/92

**Product Type:**

Transparent Glaze Frit

**Product Description**

Crystalline, needle-shaped **lead-free and lithium-free transparent glaze frit (powder form)** developed for **medium-temperature applications requiring high gloss, improved durability, and consistent glaze performance.**

**Technical Characteristics**

Parameter	Typical Value
Appearance	White powder
Structure	Crystalline, needle-shaped
Transparency	High
Gloss	Excellent
Softening Range	780 – 820°C
Fusion Temperature	800 – 850°C
Thermal Stability	Good
Chemical Stability	Good

**Application Areas**

- Crucibles and refractory products
- Protective ceramic glaze coatings
- Industrial ceramic linings
- Medium-temperature ceramic applications



## Performance Features

- Improved **mechanical strength and durability**
- Excellent **surface finish and gloss**
- Stable **melting behavior**
- Good **adhesion and coating uniformity**
- Suitable for **higher temperature applications vs 215**

## Recommended Processing Conditions

Parameter	Range
Application Form	Powder / slurry
Firing Temperature Range	780 – 880°C
Heating Rate	Controlled
Cooling	Gradual

## Packaging

- 25 Kg HDPE Bags
- Jumbo Bags (on request)

## Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure

## Safety Information

- Lead-free and lithium-free
- Use PPE (mask, gloves) during handling

## Disclaimer

The above data is based on laboratory testing and production experience. Actual performance may vary depending on application conditions.

## Crystalline Glaze Frit – M FRIT

### Material Code:

M FRIT

### Product Type:

Lithium-Based Transparent Glaze Frit

### Product Description

M FRIT is a **lithium-modified crystalline transparent glaze frit** designed for **medium-temperature applications requiring enhanced thermal shock resistance, improved durability, and superior glaze performance.**

The product offers **excellent surface finish, controlled melting behavior, and improved resistance to thermal cycling**, making it ideal for demanding industrial applications.

### Technical Characteristics

Parameter	Typical Value
Appearance	White powder
Structure	Crystalline, needle-shaped
Transparency	High
Gloss	Excellent
Softening Range	780 – 820°C
Fusion Temperature	800 – 860°C
Thermal Stability	Excellent
Thermal Shock Resistance	Excellent
Chemical Stability	Very Good

### Application Areas

- Crucibles and refractory products
- High-performance ceramic glaze coatings
- Industrial linings exposed to thermal cycling
- Applications requiring **thermal shock resistance**



## Performance Features

- Superior **thermal shock resistance (due to lithium effect)**
- Improved **glaze durability and life**
- Excellent **surface smoothness and gloss**
- Controlled **melting and flow behavior**
- Enhanced **adhesion to ceramic substrates**

## Recommended Processing Conditions

Parameter	Range
Application Form	Powder / slurry
Firing Temperature Range	780 – 880°C
Heating Rate	Controlled
Cooling	Controlled (better thermal cycling performance)

## Packaging

- 25 Kg HDPE Bags
- Jumbo Bags (on request)

## Storage & Handling

- Store in **dry conditions**
- Avoid moisture exposure

## Safety Information

- Handle with standard industrial PPE
- Refer MSDS for detailed safety guidelines

## Disclaimer

The above data is based on laboratory testing and production experience. Actual performance may vary depending on application and process conditions.

# Abrasive Frit – 906

## 1. Product Description

Frit 906 is a **medium-soft borosilicate bonding frit** designed for **abrasive applications**, offering excellent **wetting, controlled flow, and uniform bonding characteristics**. It is specially developed for applications requiring **lower fusion temperature and smoother bond formation**.

## 2. Key Features

- Lower **softening temperature** for easy processing
- Excellent **wetting of abrasive grains**
- Smooth and **uniform bond formation**
- Good **adhesion and bonding strength**
- Reduced **energy consumption during firing**
- Suitable for **fine and precision grinding applications**

## 3. Typical Properties

Property	Value
Appearance	Clear to slightly hazy frit
Form	Granular / crushed
Bulk Density	0.7 – 0.8 g/cc
Hardness	Medium-soft
Softening Range	740 – 780°C
Fusion Temperature	800 – 840°C
Thermal Stability	Good
Chemical Resistance	Good

## 4. Application Areas

- Vitrified bonded grinding wheels
- Fine grinding and finishing wheels
- General-purpose abrasive tools
- Applications requiring **smooth surface finish**

## 5. Performance Benefits

- Improved **surface finish quality**



- Better **flow** → **uniform grain coating**
- Lower **firing temperature** → **energy savings**
- Reduced **internal stresses in bond**
- Suitable for **precision grinding operations**

## 6. Recommended Processing Conditions

Parameter	Range
Bond Formation Range	720 – 800°C
Peak Firing Temperature	780 – 840°C
Heating Rate	Controlled
Cooling	Gradual

## 7. Compatibility

- Compatible with **standard abrasive grains (Al<sub>2</sub>O<sub>3</sub>, SiC)**
- Suitable for **vitrified bonding systems**
- Can be blended with **harder frits for tuning performance**

## 8. Packaging

- 25 kg HDPE bags
- Jumbo bags available on request

## 9. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure

## 10. Safety Information

- Non-hazardous under normal use
- Use **dust mask and gloves during handling**
- Refer to MSDS for detailed safety data



## **11. Disclaimer**

The information provided is based on laboratory data and production experience. Actual performance may vary depending on application and process conditions. Users are advised to conduct trials to determine suitability.

## SC-824 – Stoneware / Cookware Frit (High Temperature Transparent Base)

### 1. Product Identification

Parameter	Details
Product Code	SC-824
Product Name	Stoneware / Cookware Frit
Product Type	High Temperature Glass Frit
Application	Stoneware / Cookware / Ceramic Glaze
System Type	Transparent Base Frit

### 2. Product Description

SC-824 is a **high-temperature transparent base frit** developed for **stoneware, cookware, and ceramic glaze applications**.

The product is engineered to deliver **excellent melting behavior, strong bonding with ceramic bodies, and high gloss surface finish** at elevated firing temperatures around **1050°C**.

SC-824 provides a **stable glassy matrix** suitable for both **transparent and pigmented glaze systems**, ensuring uniform coating formation and consistent performance across production cycles.

### 3. Key Performance Features

- Suitable for **high-temperature firing (~1050°C)**
- Excellent **gloss and surface finish**
- Strong **bonding with ceramic bodies**
- Stable **melting and flow characteristics**
- Good **chemical durability**
- Compatible with **pigments and opacifiers**
- Suitable for **transparent and decorative glazes**

#### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit
Color	Transparent / light
Bulk Density	1.0 – 1.3 g/cc
Softening Range	900 – 950°C
Fusion Temperature	1000 – 1050°C
Thermal Stability	Excellent

#### 5. Functional Characteristics

Parameter	Performance
Transparency	High
Gloss	Excellent
Surface Finish	Smooth
Chemical Resistance	Good
Thermal Stability	High
Pigment Compatibility	Excellent

#### 6. Application Areas

- Stoneware ceramics
- Cookware glaze systems
- Ceramic tableware
- Decorative ceramic coatings

#### 7. Application Guidelines

##### Recommended Usage:

- Base frit for **transparent glaze systems**
- Can be blended with **opacifiers / pigments**

##### Application Method:

- Wet glaze application
- Spray coating
- Dipping

## Processing Notes:

- Maintain proper glaze formulation for **desired finish**
- Ensure uniform coating thickness
- Suitable for both **manual and automated lines**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	1000 – 1050°C
Heating Rate	Controlled
Soaking Time	Based on glaze thickness
Cooling	Controlled

## 9. Advantages

- Versatile base for **multiple ceramic applications**
- Provides **excellent gloss and clarity**
- Ensures **consistent firing performance**
- Suitable for **industrial-scale production**
- Compatible with wide range of additives

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available

## 11. Storage & Handling

- Store in **dry conditions**
- Avoid contamination

## 12. Safety Information

- Use PPE (mask, gloves, goggles)
- Avoid dust inhalation
- Refer MSDS for details



### **13. Quality Assurance**

Each batch is tested for:

- Fusion behavior
- Transparency
- Surface finish
- Batch consistency

### **14. Disclaimer**

Performance may vary depending on glaze formulation and firing conditions. Trials are recommended before commercial use.

## SC-853 – Opaque Stoneware / Cookware Frit

### 1. Product Identification

Parameter	Details
Product Code	SC-853
Product Name	Opaque Stoneware / Cookware Frit
Product Type	High Temperature Glass Frit
Application	Stoneware / Cookware / Ceramic Glaze
System Type	Opaque Base Frit

### 2. Product Description

SC-853 is a **high-temperature opaque frit** developed for **stoneware, cookware, and ceramic glaze applications** where **opacity and surface coverage** are required.

It is based on SC-824 chemistry with integrated **opacifying system**, providing **uniform whiteness, excellent coverage, and consistent surface finish**.

The product is engineered to deliver **stable melting behavior, smooth flow, and strong bonding with ceramic bodies**, ensuring reliable performance at **~1050°C firing conditions**.

### 3. Key Performance Features

- Excellent **opacity and whiteness**
- High **surface coverage and hiding power**
- Suitable for **~1050°C firing**
- Smooth **flow and leveling characteristics**
- Strong **bonding with ceramic bodies**
- Uniform **color and finish consistency**
- Compatible with **color decoration over glaze**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit
Color	White / opaque

Bulk Density	1.0 – 1.3 g/cc
Softening Range	900 – 950°C
Fusion Temperature	1000 – 1050°C
Thermal Stability	Excellent

## 5. Functional Characteristics

Parameter	Performance
Opacity	High
Gloss	Excellent
Surface Finish	Smooth
Coverage	Excellent
Chemical Resistance	Good
Thermal Stability	High

## 6. Application Areas

- Stoneware ceramics
- Cookware glaze systems
- Ceramic tableware
- White base glaze for decoration
- Industrial ceramic coatings

## 7. Application Guidelines

### Recommended Usage:

- Base frit for **opaque glaze systems**
- Can be used as **direct white glaze or base for colors**

### Application Method:

- Wet glaze application
- Spray coating
- Dipping

### Processing Notes:

- Ensure proper dispersion for **uniform opacity**
- Maintain consistent thickness for **even coverage**
- Suitable for both **manual and automated lines**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	1000 – 1050°C
Heating Rate	Controlled
Soaking Time	Based on glaze thickness
Cooling	Controlled

## 9. Advantages

- Provides **excellent whiteness and opacity**
- Reduces need for **additional opacifiers**
- Ensures **uniform surface coverage**
- Suitable for **decorative and functional ware**
- Compatible with **industrial production processes**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available

## 11. Storage & Handling

- Store in **dry conditions**
- Avoid contamination

## 12. Safety Information

- Use PPE (mask, gloves, goggles)
- Avoid dust inhalation
- Refer MSDS for details

## 13. Quality Assurance

Each batch is tested for:

- Opacity and whiteness
- Fusion behavior
- Surface finish
- Batch consistency



## **14. Disclaimer**

Performance may vary depending on glaze formulation and firing conditions. Trials are recommended before commercial use.

## SC-953 – Economic Opaque Frit (High Temperature)

### 1. Product Identification

Parameter	Details
Product Code	SC-953
Product Name	Economic Opaque Frit
Product Type	High Temperature Glass Frit
Application	Stoneware / Cookware / Ceramic Glaze
System Type	Opaque Base Frit (Economic Grade)

### 2. Product Description

SC-953 is a **cost-effective opaque frit** developed as an alternative to premium opaque frits such as SC-853.

The product is designed for applications where **good opacity and surface finish are required at optimized cost**, while allowing slightly **higher firing temperatures** for proper development.

SC-953 delivers **stable melting behavior, acceptable surface quality, and reliable bonding with ceramic bodies**, making it suitable for **mass production and cost-sensitive applications**.

### 3. Key Performance Features

- Economical solution for **opaque glaze systems**
- Good **opacity and coverage**
- Designed for **slightly higher firing temperatures**
- Stable **melting and flow behavior**
- Consistent **performance in bulk production**
- Suitable for **cost-driven ceramic manufacturers**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit
Color	White / opaque
Bulk Density	1.0 – 1.3 g/cc
Softening Range	920 – 980°C

Fusion Temperature	1020 – 1080°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Opacity	Moderate to High
Gloss	Good
Surface Finish	Smooth
Coverage	Good
Chemical Resistance	Good
Cost Efficiency	High

## 6. Application Areas

- Stoneware ceramics (economical segment)
- Cookware glaze systems
- Ceramic tableware
- Industrial ceramic coatings
- Mass production ceramic products

## 7. Application Guidelines

### Recommended Usage:

- Base frit for **cost-effective opaque glaze systems**
- Can be blended with other frits for performance tuning

### Application Method:

- Wet glaze application
- Spray coating
- Dipping

### Processing Notes:

- Requires slightly **higher firing temperature for full development**
- Maintain proper coating thickness for **uniform opacity**
- Suitable for high-volume production lines

## 8. Firing Conditions

Parameter	Range
Firing Temperature	1020 – 1080°C
Heating Rate	Controlled
Soaking Time	Based on glaze thickness
Cooling	Controlled

## 9. Advantages

- **Cost-effective alternative** to premium opaque frits
- Suitable for **large-scale manufacturing**
- Provides **acceptable opacity and finish**
- Reduces overall **production cost**
- Flexible for **blending and customization**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available

## 11. Storage & Handling

- Store in **dry conditions**
- Avoid contamination

## 12. Safety Information

- Use PPE (mask, gloves, goggles)
- Avoid dust inhalation
- Refer MSDS for details

## 13. Quality Assurance

Each batch is tested for:

- Opacity and coverage
- Fusion behavior
- Cost-performance consistency
- Batch uniformity



## **14. Disclaimer**

Performance may vary depending on glaze formulation and firing conditions. Trials are recommended before commercial use.

## SC-1200 – Porcelain / Bone China Frit

### 1. Product Identification

Parameter	Details
Product Code	SC-1200
Product Name	Porcelain / Bone China Frit
Product Type	High Temperature Glass Frit
Application	Bone China / Porcelain / Premium Tableware
System Type	Transparent / Semi-Transparent Glaze Base

### 2. Product Description

SC-1200 is a **high-performance porcelain frit** specifically developed for **bone china and fine porcelain applications**.

The product is engineered to deliver **exceptional transparency, superior gloss, and smooth surface finish**, which are critical for **premium tableware and decorative ceramic products**.

It provides a **refined glassy matrix with excellent fusion characteristics**, ensuring **strong bonding with porcelain bodies and consistent performance during high-temperature firing cycles**.

SC-1200 is suitable for applications requiring **high aesthetic value, clarity, and durability**.

### 3. Key Performance Features

- Excellent **transparency and clarity**
- High **gloss and premium surface finish**
- Strong **bonding with porcelain bodies**
- Stable performance at **high firing temperatures**
- Smooth **flow and leveling characteristics**
- Suitable for **fine and decorative tableware**
- Compatible with **overglaze and decoration systems**

#### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit
Color	Transparent / light
Bulk Density	1.0 – 1.3 g/cc
Softening Range	950 – 1000°C
Fusion Temperature	1100 – 1200°C
Thermal Stability	Excellent

#### 5. Functional Characteristics

Parameter	Performance
Transparency	Very High
Gloss	Excellent
Surface Finish	Smooth
Chemical Resistance	Excellent
Thermal Stability	High
Decorative Compatibility	Excellent

#### 6. Application Areas

- Bone china tableware
- Porcelain dinnerware
- Premium ceramic products
- Decorative and export-quality ceramics

#### 7. Application Guidelines

##### Recommended Usage:

- Base frit for **porcelain glaze systems**
- Suitable for **transparent or decorated finishes**

##### Application Method:

- Wet glaze application
- Spray coating
- Dipping

## Processing Notes:

- Ensure uniform glaze application for **premium finish**
- Maintain clean surface for **defect-free coating**
- Suitable for both **manual and automated lines**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	1100 – 1200°C
Heating Rate	Controlled
Soaking Time	Based on product thickness
Cooling	Controlled to avoid defects

## 9. Advantages

- Provides **premium quality finish for high-end products**
- Enhances **visual appeal and clarity**
- Suitable for **export-grade ceramics**
- Ensures **consistent performance in production**
- Compatible with **advanced decoration techniques**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available

## 11. Storage & Handling

- Store in **dry conditions**
- Avoid contamination

## 12. Safety Information

- Use PPE (mask, gloves, goggles)
- Avoid dust inhalation
- Refer MSDS for details



### **13. Quality Assurance**

Each batch is tested for:

- Transparency and gloss
- Fusion behavior
- Surface finish
- Batch consistency

# Lead Bisilicate Frit (Low Temperature Flux Frit)

## 1. Product Identification

Parameter	Details
Product Name	Lead Bisilicate Frit
Product Type	Low Temperature Glass Frit
Application	Ceramic Decals / Glass Colours / Low Temp Glazes
System Type	Flux Frit

## 2. Product Description

Lead Bisilicate Frit is a **low-melting, high-performance flux frit** designed for applications requiring **excellent flow, strong adhesion, and smooth glossy finish at low firing temperatures.**

The product provides a **highly reactive glass matrix**, enabling effective bonding of pigments and coatings onto ceramic and glass substrates at **relatively low firing temperatures.**

It is widely used in **ceramic decal printing, glass enamels, overglaze decoration, and specialty coatings**, where **clarity, adhesion, and surface finish** are critical.

## 3. Key Performance Features

- Low **melting temperature**
- Excellent **flow and wetting characteristics**
- High **gloss and smooth finish**
- Strong **adhesion to ceramic and glass substrates**
- Enhances **color brightness and clarity**
- Suitable for **fine decorative applications**
- Excellent compatibility with **pigment systems**

## 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit
Color	Transparent / light
Bulk Density	1.0 – 1.3 g/cc
Softening Range	500 – 600°C
Fusion Temperature	550 – 650°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Flow Behavior	Excellent
Gloss	High
Transparency	High
Adhesion	Excellent
Pigment Compatibility	Excellent
Surface Finish	Smooth

## 6. Application Areas

- Ceramic decals (overglaze decoration)
- Glass colour coatings
- Low temperature ceramic glazes
- Glass enamels and printing
- Decorative coatings

## 7. Application Guidelines

### Recommended Usage:

- Used as a **flux frit in low-temperature systems**
- Mixed with **pigments and medium for application**

### Application Method:

- Screen printing
- Spray coating
- Brush application
- Pad printing

### Processing Notes:

- Ensure proper mixing with pigments for **uniform results**
- Maintain controlled application thickness
- Suitable for **fine decorative work**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	550 – 650°C
Heating Rate	Controlled
Soaking Time	Based on application
Cooling	Controlled

## 9. Advantages

- Enables **low-temperature firing processes**
- Improves **adhesion and coating quality**
- Enhances **color brightness and gloss**
- Suitable for **detailed decorative applications**
- Widely used in **industrial and artistic coatings**

## 10. Packaging

- 25 Kg HDPE Bags
- Smaller packing available on request

## 11. Storage & Handling

- Store in **dry conditions**
- Avoid moisture and contamination

## 12. Safety Information

- Contains lead compounds — handle with care
- Use PPE (mask, gloves, goggles)
- Avoid ingestion and inhalation
- Follow regulatory guidelines for handling and disposal
- Refer MSDS for detailed safety information

## 13. Quality Assurance

Each batch is tested for:



- Fusion and flow properties
- Transparency and gloss
- Compatibility with pigments
- Batch consistency

#### **14. Disclaimer**

This product contains lead and is intended for industrial use. Users must comply with local environmental and safety regulations. Performance may vary depending on application conditions. Trials are recommended before commercial use.

# Lead-Free Bisilicate Substitute Frit (Low Temperature Flux)

## 1. Product Identification

Parameter	Details
Product Name	Lead-Free Bisilicate Substitute
Product Type	Low Temperature Glass Frit
Application	Ceramic Decals / Glass Colours / Overglaze Systems
System Type	Lead-Free Flux Frit

## 2. Product Description

Lead-Free Bisilicate Substitute is a **high-performance, environmentally compliant flux frit** developed as a replacement for traditional **lead bisilicate frits**.

The product is engineered to deliver **comparable melting behavior, adhesion, and surface finish**, while eliminating the use of lead to meet **global environmental and safety regulations**.

It is suitable for applications requiring **low-temperature firing, high gloss, and strong bonding**, making it ideal for **ceramic decals, glass printing, and decorative coatings**, especially in **export-oriented industries**.

## 3. Key Performance Features

- **Lead-free formulation** compliant with environmental regulations
- **Low melting temperature comparable to lead frits**
- **Excellent flow and wetting characteristics**
- **High gloss and smooth surface finish**
- **Strong adhesion to ceramic and glass substrates**
- **Enhances color clarity and brightness**
- **Suitable for export and food-contact compliant applications**

## 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit
Color	Transparent / light

Bulk Density	1.0 – 1.3 g/cc
Softening Range	550 – 650°C
Fusion Temperature	600 – 700°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Flow Behavior	Excellent
Gloss	High
Transparency	High
Adhesion	Excellent
Pigment Compatibility	Excellent
Environmental Compliance	High

## 6. Application Areas

- Ceramic decals (lead-free systems)
- Glass colour coatings
- Overglaze decoration
- Low-temperature ceramic glazes
- Export-oriented ceramic products

## 7. Application Guidelines

### Recommended Usage:

- Used as **lead-free flux in decorative systems**
- Compatible with wide range of **pigments and mediums**

### Application Method:

- Screen printing
- Spray coating
- Pad printing
- Brush application

### Processing Notes:

- Slight adjustment in firing cycle may be required vs lead frit
- Ensure proper mixing for **uniform dispersion**



- Suitable for **fine decorative applications**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	600 – 700°C
Heating Rate	Controlled
Soaking Time	Based on application
Cooling	Controlled

## 9. Advantages

- Meets **global environmental standards (RoHS / REACH type requirements)**
- Eliminates **health and regulatory concerns of lead**
- Suitable for **export markets (EU, US, Middle East)**
- Provides **comparable performance to lead frits**
- Future-ready product for **regulation-driven industries**

## 10. Packaging

- 25 Kg HDPE Bags
- Smaller packs available on request

## 11. Storage & Handling

- Store in **dry conditions**
- Avoid contamination

## 12. Safety Information

- Non-hazardous under normal conditions
- Use PPE (mask, gloves, goggles)
- Avoid dust inhalation
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance

Each batch is tested for:

- Fusion and flow properties



- Gloss and transparency
- Pigment compatibility
- Batch consistency

#### **14. Disclaimer**

Performance may vary depending on formulation and firing conditions.  
Users are advised to conduct trials before commercial use.

## SC-685 – High Performance Frit (Ferro Equivalent / Replacement Grade)

### 1. Product Identification

Parameter	Details
Product Code	SC-685
Product Name	High Performance Frit
Product Type	Glass Frit
Application	Ceramic Glaze / Tableware / Industrial Coatings
System Type	Multi-Purpose Performance Frit

### 2. Product Description

SC-685 is a **high-performance glass frit** developed as a **direct equivalent and replacement for internationally established grades** used in ceramic and tableware industries.

The product is engineered to deliver **excellent melting behavior, superior surface finish, and strong bonding characteristics**, ensuring consistent performance in demanding production environments.

SC-685 offers a balanced combination of **flow, gloss, and durability**, making it suitable for both **transparent and pigmented glaze systems** across a wide range of applications.

### 3. Key Performance Features

- Designed as **equivalent / alternative to imported frits**
- Excellent **flow and leveling characteristics**
- High **gloss and smooth surface finish**
- Strong **adhesion to ceramic substrates**
- Stable performance across **varying firing conditions**
- Compatible with **pigments and opacifiers**
- Suitable for **high-volume industrial production**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit

Color	Transparent / light
Bulk Density	1.0 – 1.3 g/cc
Softening Range	850 – 900°C
Fusion Temperature	950 – 1050°C
Thermal Stability	Excellent

## 5. Functional Characteristics

Parameter	Performance
Flow Behavior	Excellent
Gloss	High
Surface Finish	Smooth
Adhesion	Strong
Pigment Compatibility	Excellent
Process Stability	High

## 6. Application Areas

- Ceramic tableware
- Stoneware and cookware
- Industrial ceramic coatings
- Decorative glaze systems
- Replacement for imported frits

## 7. Application Guidelines

### Recommended Usage:

- Can be used as **base frit or blending component**
- Suitable for both **transparent and opaque systems**

### Application Method:

- Wet glaze application
- Spray coating
- Dipping

### Processing Notes:

- Compatible with standard glaze formulations
- Provides stable results in **continuous production lines**

- Easy to integrate into **existing systems**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	950 – 1050°C
Heating Rate	Controlled
Soaking Time	Based on glaze thickness
Cooling	Controlled

## 9. Advantages

- **Cost-effective replacement for imported frits**
- Reduces dependency on **international suppliers**
- Ensures **consistent local availability**
- Provides **reliable and repeatable performance**
- Supports **large-scale production requirements**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available

## 11. Storage & Handling

- Store in **dry conditions**
- Avoid contamination

## 12. Safety Information

- Use PPE (mask, gloves, goggles)
- Avoid dust inhalation
- Refer MSDS for details

## 13. Quality Assurance

Each batch is tested for:

- Fusion and flow properties
- Surface finish
- Compatibility with glaze systems



- Batch consistency

#### **14. Disclaimer**

Performance may vary depending on application conditions and formulations. Users are advised to conduct trials before commercial use.

## SC-9155 – Ground Coat Hard Member Frit

### 1. Product Identification

Parameter	Details
Product Code	SC-9155
Product Name	Ground Coat Hard Member
Product Type	Enamel Frit
Application	Cookware / Appliance / Industrial Enamel
System Type	Two Coat System (with Soft Member)

### 2. Product Description

SC-9155 is a **high-strength ground coat hard member frit** specifically engineered to provide **excellent adhesion to ferrous substrates and superior mechanical durability** in enamel coating systems.

It forms the **structural backbone of the enamel system**, ensuring strong bonding between the metal substrate and the enamel layer. The product is designed for use in **two-coat systems**, where it works in combination with a soft member frit (such as SC-9157) to achieve optimized coating performance.

SC-9155 is suitable for **high-volume industrial applications**, delivering consistent performance, reliable adhesion, and long-term durability.

### 3. Key Performance Features

- Excellent **adhesion to mild steel and low carbon steel**
- High **mechanical strength and coating durability**
- Stable **thermal behavior during firing cycles**
- Good resistance to **chipping and mechanical impact**
- Provides a strong base for **cover coat application**
- Compatible with **various enamel systems**
- Suitable for **continuous production environments**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit

Color	Light / off-white
Bulk Density	1.0 – 1.3 g/cc
Hardness	High
Softening Range	820 – 860°C
Fusion Temperature	840 – 880°C
Thermal Stability	Excellent

## 5. Functional Characteristics

Parameter	Performance
Adhesion to Steel	Excellent
Mechanical Strength	High
Flow Behavior	Moderate
Stress Resistance	Good
Coating Integrity	Excellent
Compatibility	Excellent with soft member frits

## 6. Application Areas

- Enamel cookware (kadai, pots, pans, utensils)
- Appliance panels and housings
- Industrial enamel-coated components
- Base layer in multi-coat enamel systems

## 7. Application Guidelines

### Recommended Usage:

- To be used in combination with **soft member frit (SC-9157)**
- Ratio can be adjusted depending on required **flow vs strength balance**

### Application Method:

- Wet application (slurry-based)
- Spray coating
- Dipping
- Electrostatic coating

### Processing Notes:

- Higher hard member ratio improves **strength and adhesion**
- Proper mixing ensures **uniform coating performance**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	820 – 880°C
Heating Rate	Controlled
Soaking Time	Based on coating thickness
Cooling	Gradual to avoid thermal stress

## 9. Advantages

- Strong **metal-to-enamel bonding**
- Improved **coating life and durability**
- Reduced risk of **peeling and failure**
- Suitable for **high-speed manufacturing lines**
- Provides stable base for **high-quality finishing coats**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available on request

## 11. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure and contamination

## 12. Safety Information

- Non-hazardous under normal handling conditions
- Use appropriate PPE (mask, gloves, goggles)
- Avoid inhalation of dust
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance

Each batch is manufactured under strict quality control systems to ensure:

- Consistent **product quality**



- Uniform **particle characteristics**
- Reliable **performance in application**
- Batch-to-batch consistency

#### **14. Disclaimer**

The information provided is based on laboratory testing and practical production experience. Actual performance may vary depending on processing conditions and application requirements. Users are advised to conduct trials before commercial use.

## SC-9157 – Ground Coat Soft Member Frit

### 1. Product Identification

Parameter	Details
Product Code	SC-9157
Product Name	Ground Coat Soft Member
Product Type	Enamel Frit
Application	Cookware / Appliance / Industrial Enamel
System Type	Two Coat System (with Hard Member)

### 2. Product Description

SC-9157 is a **high-performance soft member frit** specifically developed for use in **ground coat enamel systems** in combination with hard member frits such as **SC-9155**.

It plays a critical role in controlling **flow behavior, surface leveling, and stress distribution** within the enamel coating. The product ensures **smooth and uniform coating formation**, while minimizing internal stresses generated during firing and cooling cycles.

SC-9157 is particularly suitable for applications requiring **enhanced coating flexibility, improved surface finish, and reduced defect formation**, making it an essential component in achieving high-quality enamel coatings.

### 3. Key Performance Features

- Enhances **flow and wetting characteristics of enamel slurry**
- Improves **surface leveling and smoothness of coating**
- Reduces **internal stresses during firing and cooling**
- Minimizes risk of **cracking, chipping, and peeling**
- Ensures **uniform coating thickness and distribution**
- Provides excellent compatibility with **hard member frits**
- Supports **consistent performance in industrial processes**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit

Color	Light / off-white
Bulk Density	0.9 – 1.2 g/cc
Hardness	Medium-Soft
Softening Range	760 – 800°C
Fusion Temperature	780 – 840°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Flow Behavior	High
Surface Leveling	Excellent
Stress Relief	Excellent
Adhesion Contribution	Moderate
Coating Uniformity	Excellent
Compatibility	Excellent with SC-9155

## 6. Application Areas

- Enamel cookware (pots, pans, utensils)
- Appliance panels and housings
- Industrial enamel-coated components
- Multi-layer enamel coating systems

## 7. Application Guidelines

### Recommended Usage:

- To be used in combination with **SC-9155 (Hard Member)**
- Ratio can be optimized based on required **flow vs strength balance**

### Application Method:

- Wet application (slurry preparation)
- Spray coating
- Dipping
- Electrostatic coating

### Processing Notes:

- Higher soft member content improves **flow and surface finish**

- Lower soft member content increases **coating strength**
- Proper mixing ensures **uniform performance**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	780 – 840°C
Heating Rate	Controlled
Soaking Time	Based on coating thickness
Cooling	Gradual to prevent thermal stress

## 9. Advantages

- Improves **overall coating quality and finish**
- Reduces **manufacturing defects and rejects**
- Enhances **process flexibility and control**
- Supports **high-speed production environments**
- Enables **custom tuning of enamel properties**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available on request

## 11. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure and contamination

## 12. Safety Information

- Non-hazardous under normal handling conditions
- Use appropriate PPE (mask, gloves, goggles)
- Avoid inhalation of dust
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance

Each batch is manufactured under strict quality control systems to ensure:

- Consistent **flow and melting behavior**



- Uniform **particle quality**
- Reliable **performance in enamel systems**
- Batch-to-batch consistency

#### **14. Disclaimer**

The information provided is based on laboratory testing and practical production experience. Actual performance may vary depending on application conditions. Users are advised to conduct trials before commercial use.

# Ground Coat Mix – Single Member Frit

## 1. Product Identification

Parameter	Details
Product Code	Ground Coat Mix
Product Name	Single Member Ground Coat
Product Type	Enamel Frit
Application	Cookware / Appliance / General Enamel
System Type	Single Coat System

## 2. Product Description

Ground Coat Mix is a **pre-formulated single-member enamel frit** designed to combine the functionalities of both **hard and soft member frits** into a single system.

It is engineered to provide **excellent adhesion to metal substrates along with controlled flow and surface leveling**, eliminating the need for separate hard and soft member blending. This simplifies the enamel application process while maintaining consistent coating quality.

The product is particularly suitable for **high-volume manufacturing environments**, where process efficiency, reduced handling, and repeatability are critical.

## 3. Key Performance Features

- Single component system for **simplified processing**
- Provides both **adhesion and flow characteristics**
- Ensures **uniform coating formation**
- Reduces dependency on manual blending
- Minimizes **process variability and errors**
- Suitable for **automated production lines**
- Consistent performance across batches

## 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit

Color	Light / off-white
Bulk Density	1.0 – 1.3 g/cc
Hardness	Medium
Softening Range	780 – 820°C
Fusion Temperature	800 – 860°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Adhesion to Steel	Excellent
Flow Behavior	Balanced
Surface Leveling	Good
Coating Uniformity	Excellent
Process Simplicity	High
Defect Reduction	Good

## 6. Application Areas

- Enamel cookware
- Appliance panels and housings
- Industrial enamel components
- Applications requiring **single coat systems**

## 7. Application Guidelines

### Recommended Usage:

- Ready-to-use **single member system**
- No blending required

### Application Method:

- Wet application (slurry preparation)
- Spray coating
- Dipping
- Electrostatic coating

### Processing Notes:

- Ensure proper slurry preparation for **uniform coating**
- Maintain consistent application thickness for best results

## 8. Firing Conditions

Parameter	Range
Firing Temperature	800 – 860°C
Heating Rate	Controlled
Soaking Time	Based on coating thickness
Cooling	Gradual to prevent thermal stress

## 9. Advantages

- Simplifies **production process**
- Reduces **inventory complexity**
- Minimizes **mixing errors**
- Improves **process consistency**
- Suitable for **high-volume production**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available on request

## 11. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure and contamination

## 12. Safety Information

- Non-hazardous under normal handling conditions
- Use appropriate PPE (mask, gloves, goggles)
- Avoid inhalation of dust
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance

Each batch is manufactured under strict quality control systems to ensure:

- Consistent **adhesion and flow properties**



- Uniform **particle size and quality**
- Reliable **performance in application**
- Batch-to-batch consistency

#### **14. Disclaimer**

The information provided is based on laboratory testing and practical production experience. Actual performance may vary depending on application conditions. Users are advised to conduct trials before commercial use.

## SC-12001 – Transparent Cover Coat (Non-Cadmium Colours)

### 1. Product Identification

Parameter	Details
Product Code	SC-12001
Product Name	Transparent Cover Coat (Non-Cadmium)
Product Type	Enamel Frit
Application	Cookware / Appliance / Decorative Enamel
System Type	Cover Coat

### 2. Product Description

SC-12001 is a **high-quality transparent cover coat frit** specifically designed for use with **non-cadmium pigments** in enamel coating systems.

It provides **excellent transparency, high gloss, and smooth surface finish**, ensuring optimal color development of underlying pigments. The frit is engineered to deliver **uniform melting behavior, stable performance during firing, and consistent aesthetic quality**.

SC-12001 is suitable for applications where **clarity, brightness, and surface finish are critical**, making it ideal for both functional and decorative enamel coatings.

### 3. Key Performance Features

- High **transparency for enhanced color visibility**
- Excellent **gloss and smooth surface finish**
- Promotes **uniform pigment dispersion and color development**
- Stable **melting and flow characteristics**
- Good **adhesion to ground coat layers**
- Compatible with a wide range of **non-cadmium pigments**
- Suitable for **industrial and decorative applications**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit

Color	Transparent / light
Bulk Density	1.0 – 1.3 g/cc
Hardness	Medium
Softening Range	780 – 820°C
Fusion Temperature	800 – 840°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Transparency	High
Gloss	Excellent
Surface Finish	Smooth
Pigment Compatibility	Excellent (Non-Cadmium)
Flow Behavior	Balanced
Adhesion to Ground Coat	Good

## 6. Application Areas

- Enamel cookware (decorative finishes)
- Appliance panels
- Industrial enamel coatings
- Decorative enamel applications

## 7. Application Guidelines

### Recommended Usage:

- To be applied over **ground coat layers**
- Compatible with **non-cadmium pigments**

### Application Method:

- Wet application (slurry preparation)
- Spray coating
- Dipping

### Processing Notes:

- Ensure proper dispersion of pigments for **uniform color development**



- Maintain controlled coating thickness for **optimal transparency**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	750 – 790°C
Heating Rate	Controlled
Soaking Time	Based on coating thickness
Cooling	Gradual to maintain surface quality

## 9. Advantages

- Enhances **visual appeal of enamel coatings**
- Provides **bright and clear finishes**
- Improves **color consistency and uniformity**
- Suitable for **high-quality decorative applications**
- Compatible with a wide range of pigment systems

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available on request

## 11. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure and contamination

## 12. Safety Information

- Non-hazardous under normal handling conditions
- Use appropriate PPE (mask, gloves, goggles)
- Avoid inhalation of dust
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance

Each batch is manufactured under strict quality control systems to ensure:

- Consistent **transparency and gloss**
- Uniform **melting behavior**



- Reliable **performance in enamel systems**
- Batch-to-batch consistency

#### **14. Disclaimer**

The information provided is based on laboratory testing and practical production experience. Actual performance may vary depending on application conditions. Users are advised to conduct trials before

## SC-12000 – Transparent Cover Coat (Cadmium Colours)

### 1. Product Identification

Parameter	Details
Product Code	SC-12000
Product Name	Transparent Cover Coat (Cadmium Colours)
Product Type	Enamel Frit
Application	Cookware / Appliance / Decorative Enamel
System Type	Cover Coat

### 2. Product Description

SC-12000 is a **specialized transparent cover coat frit** developed for use with **cadmium-based pigments** in enamel systems.

Cadmium pigments require **precise thermal and chemical compatibility** to maintain their brightness and stability during firing. SC-12000 is engineered to provide **controlled melting behavior, stable interaction with cadmium pigments, and excellent surface finish**, ensuring that the final coating retains its intended color intensity and clarity.

The product delivers **high gloss, uniform coating, and reliable performance**, making it suitable for applications where **vibrant colors and aesthetic quality are critical**.

### 3. Key Performance Features

- Designed for **cadmium-based pigment systems**
- Maintains **color brightness and stability during firing**
- Excellent **transparency and gloss**
- Controlled **melting and flow behavior**
- Uniform **surface finish and coating quality**
- Good **adhesion to ground coat layers**
- Suitable for **high-quality decorative applications**

### 4. Typical Physical Properties

Property	Typical Value
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Appearance	Granular frit
Color	Transparent / light
Bulk Density	1.0 – 1.3 g/cc
Hardness	Medium
Softening Range	780 – 820°C
Fusion Temperature	800 – 840°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Transparency	High
Gloss	Excellent
Surface Finish	Smooth
Pigment Compatibility	Excellent (Cadmium pigments)
Flow Behavior	Balanced
Color Stability	Excellent

## 6. Application Areas

- Enamel cookware with colored coatings
- Decorative enamel applications
- Appliance panels requiring bright colors
- Industrial enamel coatings with cadmium pigments

## 7. Application Guidelines

### Recommended Usage:

- To be applied over **ground coat layers**
- Designed specifically for **cadmium pigment systems**

### Application Method:

- Wet application (slurry preparation)
- Spray coating
- Dipping

### Processing Notes:



- Maintain controlled firing conditions to preserve **pigment stability**
- Ensure proper pigment dispersion for **uniform color development**
- Avoid over-firing to prevent color degradation

## 8. Firing Conditions

Parameter	Range
Firing Temperature	750 – 790°C
Heating Rate	Controlled
Soaking Time	Based on coating thickness
Cooling	Gradual to maintain color integrity

## 9. Advantages

- Preserves **brightness of cadmium colors**
- Ensures **consistent color output**
- Provides **high gloss and smooth finish**
- Suitable for **premium decorative applications**
- Compatible with industrial production processes

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available on request

## 11. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure and contamination

## 12. Safety Information

- Use appropriate PPE (mask, gloves, goggles)
- Avoid inhalation of dust
- Handle cadmium-containing systems with appropriate precautions
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance

Each batch is manufactured under strict quality control systems to ensure:



- Consistent **color compatibility**
- Uniform **melting characteristics**
- Reliable **performance with cadmium pigments**
- Batch-to-batch consistency

#### **14. Disclaimer**

The information provided is based on laboratory testing and practical production experience. Actual performance may vary depending on application conditions and pigment systems. Users are advised to conduct trials before commercial use.

## SC-12301 – Blue Cover Coat Frit

### 1. Product Identification

Parameter	Details
Product Code	SC-12301
Product Name	Blue Cover Coat
Product Type	Enamel Frit
Application	Cookware / Appliance / Decorative Enamel
System Type	Cover Coat (Pre-Colored)

### 2. Product Description

SC-12301 is a **pre-colored enamel cover coat frit** designed to provide a **uniform blue shade with high gloss and excellent surface finish**.

The product is engineered to deliver **consistent color development, stable performance during firing, and strong adhesion to ground coat layers**. It eliminates the need for additional pigment blending, ensuring **process simplicity and repeatability**.

SC-12301 is suitable for applications requiring **aesthetic appeal, color uniformity, and durable enamel coatings**.

### 3. Key Performance Features

- Pre-colored frit for **consistent blue shade**
- Excellent **gloss and smooth surface finish**
- Eliminates need for **pigment addition**
- Uniform **color distribution and coating quality**
- Good **adhesion to ground coat layers**
- Stable performance during **firing cycles**
- Suitable for **industrial and decorative applications**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Blue granular frit
Color	Blue
Bulk Density	1.0 – 1.3 g/cc

Hardness	Medium
Softening Range	780 – 820°C
Fusion Temperature	800 – 840°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Color Uniformity	Excellent
Gloss	High
Surface Finish	Smooth
Adhesion to Ground Coat	Good
Flow Behavior	Balanced
Process Simplicity	High

## 6. Application Areas

- Enamel cookware (colored finishes)
- Appliance panels and housings
- Decorative enamel components
- Industrial enamel products requiring color consistency

## 7. Application Guidelines

### Recommended Usage:

- Ready-to-use **pre-colored cover coat**
- To be applied over **ground coat layers**

### Application Method:

- Wet application (slurry preparation)
- Spray coating
- Dipping

### Processing Notes:

- Ensure uniform slurry preparation for **consistent color distribution**
- Maintain controlled application thickness for **optimal finish**



- Avoid over-firing to preserve **color integrity**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	780 – 840°C
Heating Rate	Controlled
Soaking Time	Based on coating thickness
Cooling	Gradual to maintain surface quality

## 9. Advantages

- Consistent **blue color without pigment variation**
- High **aesthetic appeal and gloss**
- Simplifies **production process**
- Reduces **batch-to-batch variation**
- Suitable for **large-scale manufacturing**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available on request

## 11. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure and contamination

## 12. Safety Information

- Non-hazardous under normal handling conditions
- Use appropriate PPE (mask, gloves, goggles)
- Avoid inhalation of dust
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance

Each batch is manufactured under strict quality control systems to ensure:

- Consistent **color and gloss**
- Uniform **melting behavior**



- Reliable **performance in application**
- Batch-to-batch consistency

#### **14. Disclaimer**

The information provided is based on laboratory testing and practical production experience. Actual performance may vary depending on application conditions. Users are advised to conduct trials before commercial use.

## SC-12306 – High Gloss Black Cover Coat (Cookware)

### 1. Product Identification

Parameter	Details
Product Code	SC-12306
Product Name	High Gloss Black Cover Coat
Product Type	Enamel Frit
Application	Cookware
System Type	Single Member Cover Coat

### 2. Product Description

SC-12306 is a **single-member high gloss black enamel frit** specially developed for cookware applications requiring **deep black color, excellent gloss, and durable surface performance**.

The product is engineered to deliver **uniform color development, smooth surface finish, and strong adhesion**, eliminating the need for additional pigment blending. It ensures **consistent coating quality and repeatability in production**.

SC-12306 is suitable for applications where **aesthetic appeal, durability, and process simplicity** are critical.

### 3. Key Performance Features

- Deep **black color with high opacity**
- Excellent **high gloss finish**
- Single component system (no pigment addition required)
- Uniform **color distribution and surface quality**
- Good **adhesion to ground coat layers**
- Stable performance during **firing cycles**
- Suitable for **high-volume cookware production**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Black granular frit
Color	Deep Black

Bulk Density	1.0 – 1.3 g/cc
Hardness	Medium
Softening Range	780 – 820°C
Fusion Temperature	800 – 840°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Color Intensity	High
Gloss	Excellent
Surface Finish	Smooth
Adhesion to Ground Coat	Good
Flow Behavior	Balanced
Scratch Resistance	Good

## 6. Application Areas

- Enamel cookware (kadai, pots, pans, utensils)
- Kitchenware components
- Decorative cookware finishes
- Industrial enamel applications requiring black coating

## 7. Application Guidelines

### Recommended Usage:

- Ready-to-use **single member cover coat**
- To be applied over **ground coat layers**

### Application Method:

- Wet application (slurry preparation)
- Spray coating
- Dipping

### Processing Notes:

- Ensure uniform slurry preparation for **consistent color and gloss**
- Maintain controlled coating thickness for **optimal finish**
- Avoid over-firing to preserve **surface quality and gloss**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	780 – 840°C
Heating Rate	Controlled
Soaking Time	Based on coating thickness
Cooling	Gradual to maintain surface integrity

## 9. Advantages

- Provides **premium black finish with high gloss**
- Simplifies production due to **single component system**
- Ensures **consistent aesthetic quality**
- Reduces **process variability and defects**
- Suitable for **large-scale cookware manufacturing**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available on request

## 11. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure and contamination

## 12. Safety Information

- Non-hazardous under normal handling conditions
- Use appropriate PPE (mask, gloves, goggles)
- Avoid inhalation of dust
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance

Each batch is manufactured under strict quality control systems to ensure:

- Consistent **color and gloss**
- Uniform **melting behavior**
- Reliable **performance in application**
- Batch-to-batch consistency



## **14. Disclaimer**

The information provided is based on laboratory testing and practical production experience. Actual performance may vary depending on application conditions. Users are advised to conduct trials before commercial use.

# SC-123001 – Single Member Coat (Solar Tank / Geyser Coil)

## 1. Product Identification

Parameter	Details
Product Code	SC-123001
Product Name	Single Member Coat (Solar Tank / Geyser Coil)
Product Type	Enamel Frit
Application	Solar Water Heater Tanks / Geyser Tanks / Heating Coils
System Type	Single Coat Functional Enamel

## 2. Product Description

SC-123001 is a **high-performance single-member enamel frit** specifically developed for **solar water heater tanks, geyser inner tanks, and heating coil applications.**

The product is engineered to provide **excellent corrosion resistance, superior thermal stability, and long-term durability** under continuous exposure to hot water and cyclic heating conditions.

It combines **adhesion, flow, and protective properties** into a single system, eliminating the need for multiple coating layers and simplifying the application process.

SC-123001 is particularly suitable for applications where **long service life, resistance to water corrosion, and thermal shock stability** are critical performance requirements.

## 3. Key Performance Features

- Excellent **corrosion resistance in hot water environments**
- High **thermal stability under cyclic heating conditions**
- Superior **thermal shock resistance**
- Strong **adhesion to steel substrates**
- Single component system for **process simplicity**
- Uniform and **defect-free coating formation**
- Long-term **durability and reliability in service**

#### 4. Typical Physical Properties

Property	Typical Value
Appearance	Granular frit
Color	Light / off-white
Bulk Density	1.0 – 1.3 g/cc
Hardness	Medium
Softening Range	800 – 840°C
Fusion Temperature	820 – 880°C
Thermal Stability	Excellent

#### 5. Functional Characteristics

Parameter	Performance
Corrosion Resistance	Excellent
Thermal Shock Resistance	Excellent
Adhesion to Steel	Excellent
Flow Behavior	Balanced
Coating Integrity	High
Service Life	Long

#### 6. Application Areas

- Solar water heater tanks
- Electric geyser inner tanks
- Heating coils and water heating elements
- Industrial hot water storage systems

#### 7. Application Guidelines

##### Recommended Usage:

- Ready-to-use **single member system**
- Designed for **direct application on steel substrates**

##### Application Method:

- Wet application (slurry preparation)
- Spray coating
- Dipping

## Processing Notes:

- Ensure proper surface preparation for **maximum adhesion**
- Maintain uniform coating thickness for **optimal corrosion resistance**
- Controlled firing is critical for **long-term performance**

## 8. Firing Conditions

Parameter	Range
Firing Temperature	820 – 880°C
Heating Rate	Controlled
Soaking Time	Based on coating thickness
Cooling	Gradual to prevent thermal stress

## 9. Advantages

- Provides **long-term protection against corrosion**
- Enhances **service life of tanks and heating systems**
- Reduces **maintenance and failure rates**
- Simplifies production with **single coat system**
- Suitable for **continuous and high-volume manufacturing**

## 10. Packaging

- 25 Kg HDPE Bags
- Jumbo Bags available on request

## 11. Storage & Handling

- Store in **dry and covered conditions**
- Avoid moisture exposure and contamination

## 12. Safety Information

- Non-hazardous under normal handling conditions
- Use appropriate PPE (mask, gloves, goggles)
- Avoid inhalation of dust
- Refer MSDS for detailed safety guidelines

## 13. Quality Assurance



Each batch is manufactured under strict quality control systems to ensure:

- Consistent **corrosion resistance performance**
- Uniform **melting and coating behavior**
- Reliable **long-term durability**
- Batch-to-batch consistency

#### **14. Disclaimer**

The information provided is based on laboratory testing and practical production experience. Actual performance may vary depending on application conditions. Users are advised to conduct trials before commercial use.

## SC-CI-GC – Cast Iron Ground Coat Powder

### 1. Product Identification

Parameter	Details
Product Code	SC-CI-GC
Product Name	Cast Iron Ground Coat Powder
Product Type	Enamel Powder
Application	Cast Iron Cookware / Industrial Castings
System Type	Ground Coat (Base Layer)

### 2. Product Description

SC-CI-GC is a **high-performance enamel ground coat powder** specially developed for **cast iron substrates**.

The product is engineered to provide **excellent adhesion, controlled fusion, and strong bonding with cast iron surfaces**, which typically have **higher roughness and carbon content compared to mild steel**.

It forms a **robust base layer** that enhances coating integrity and ensures compatibility with subsequent cover coat applications.

### 3. Key Performance Features

- Excellent **adhesion to cast iron substrates**
- Designed for **high porosity and rough surfaces**
- Provides strong **mechanical bonding**
- Controlled **melting and wetting behavior**
- Enhances **coating durability and life**
- Compatible with **various cover coat systems**
- Suitable for **powder application processes**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Fine powder
Color	Grey / off-white
Particle Size	Controlled powder grade
Bulk Density	1.1 – 1.4 g/cc

Softening Range	800 – 840°C
Fusion Temperature	820 – 880°C
Thermal Stability	Excellent

## 5. Functional Characteristics

Parameter	Performance
Adhesion to Cast Iron	Excellent
Surface Wetting	Good
Coating Bond Strength	High
Thermal Shock Resistance	Good
Compatibility	Excellent with CI Cover Coats

## 6. Application Areas

- Cast iron cookware (tawa, kadai, grills)
- Industrial cast iron components
- Decorative cast iron products
- Heat-resistant cast iron applications

## 7. Application Guidelines

### Recommended Usage:

- Base coat for **cast iron enamel systems**
- Followed by **cover coat powder**

### Application Method:

- Electrostatic powder coating
- Dry powder application
- Fluidized bed (if applicable)

### Surface Preparation:

- Proper cleaning / shot blasting recommended
- Surface must be free from oil, rust, and contaminants

## 8. Firing Conditions

Parameter	Range
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Firing Temperature	820 – 880°C
Heating Rate	Controlled
Soaking Time	Based on part thickness
Cooling	Controlled cooling

## 9. Advantages

- Ensures strong **bonding with cast iron**
- Improves **coating reliability and durability**
- Reduces **coating failures and rejects**
- Suitable for **heavy-duty applications**
- Compatible with **various finishing coats**

## 10. Packaging

- 25 Kg HDPE Bags
- Moisture-resistant packaging available

## 11. Storage & Handling

- Store in **dry environment**
- Avoid moisture absorption

## 12. Safety Information

- Use PPE (mask, gloves, goggles)
- Avoid dust inhalation
- Ensure proper ventilation

## 13. Quality Assurance

Each batch is tested for:

- Adhesion performance
- Particle size consistency
- Fusion characteristics
- Application reliability

## 14. Disclaimer



Performance may vary depending on casting quality and application conditions. Trial is recommended before production use.

## SC-CI-CC – Cast Iron Cover Coat Powder

### 1. Product Identification

Parameter	Details
Product Code	SC-CI-CC
Product Name	Cast Iron Cover Coat Powder
Product Type	Enamel Powder
Application	Cast Iron Cookware / Decorative Applications
System Type	Cover Coat

### 2. Product Description

SC-CI-CC is a **premium enamel cover coat powder** designed for application over **cast iron ground coat layers**.

The product provides **excellent surface finish, high gloss (or matte variants if required), and superior durability**, ensuring both **aesthetic appeal and functional protection**.

It is engineered for **uniform melting, smooth flow, and strong bonding with ground coat**, resulting in a **defect-free and long-lasting coating**.

### 3. Key Performance Features

- Excellent **surface finish and smoothness**
- High **gloss / aesthetic appeal**
- Uniform **melting and flow characteristics**
- Strong **bonding with ground coat**
- Good **scratch and wear resistance**
- Available in **multiple color options**
- Suitable for **premium cookware applications**

### 4. Typical Physical Properties

Property	Typical Value
Appearance	Fine powder
Color	As per requirement
Particle Size	Controlled powder grade
Bulk Density	1.1 – 1.4 g/cc

Softening Range	780 – 820°C
Fusion Temperature	800 – 860°C
Thermal Stability	Good

## 5. Functional Characteristics

Parameter	Performance
Surface Finish	Excellent
Gloss	High
Color Uniformity	Excellent
Adhesion to Ground Coat	Strong
Flow Behavior	Balanced
Scratch Resistance	Good

## 6. Application Areas

- Cast iron cookware (premium finish)
- Decorative cast iron items
- Kitchenware and grills
- Industrial cast iron components

## 7. Application Guidelines

### Recommended Usage:

- Applied over **SC-CI-GC ground coat**

### Application Method:

- Electrostatic powder coating
- Dry powder application

### Processing Notes:

- Ensure uniform application thickness
- Maintain clean surface before coating
- Avoid contamination for best finish

## 8. Firing Conditions

Parameter	Range
-----------	-------

Firing Temperature	800 – 860°C
Heating Rate	Controlled
Soaking Time	Based on thickness
Cooling	Gradual

## 9. Advantages

- Provides **premium finish and appearance**
- Enhances **product value and aesthetics**
- Improves **durability and resistance**
- Suitable for **export-quality cookware**
- Supports **consistent production output**

## 10. Packaging

- 25 Kg HDPE Bags
- Custom packaging available

## 11. Storage & Handling

- Store in **dry conditions**
- Protect from moisture

## 12. Safety Information

- Use PPE during handling
- Avoid dust inhalation
- Ensure proper ventilation

## 13. Quality Assurance

Each batch is tested for:

- Surface finish and gloss
- Color consistency
- Flow and fusion properties
- Adhesion performance

## 14. Disclaimer



Performance may vary depending on application conditions and substrate quality. Trials are recommended before production.

# LEAD-FREE GLASS COLOURS (600–650°C)

## 1. Product Description

Lead-free glass enamel colours designed for decorative and functional applications on glass substrates such as **perfume bottles, toughened glass, architectural glass, automotive glass, and tableware**. These colours comply with modern environmental standards and eliminate heavy metals like lead and cadmium.

## 2. Key Features

- Completely **lead-free / heavy metal compliant**
- Suitable for **tempering cycles (600–650°C)**
- Excellent **adhesion on soda-lime glass**
- High **gloss / matte finish options available**
- Good **chemical and weather resistance**
- Compatible with **multi-colour decoration systems**
- Environmentally safe and export compliant

## 3. Applications

- Perfume & cosmetic glass bottles
- Toughened architectural glass (facades, partitions)
- Automotive glass (logos, borders, defrost areas)
- Decorative glass panels
- Tableware and container glass

## 4. Physical Form

- Paste (oil-based / water-based)
- Powder
- Thermoplastic form

## 5. Application Methods

- Screen printing
- Roller coating
- Spray application
- Pad printing

## 6. Firing Conditions

- **Furnace temperature:** 600–650°C
- **Peak glass temperature:** 630–650°C
- **Firing time:** 100–300 seconds (tempering line)
- Suitable for **tempered and heat-strengthened glass cycles**

## 7. Surface Finish

- High gloss (higher temperature → higher gloss)
- Matte / satin (controlled firing cycle)
- Uniform colour development across wide firing range

## 8. Adhesion Properties

- Strong bonding with glass substrate
- Suitable for post-tempering applications
- Resistant to peeling and flaking

## 9. Chemical Resistance

- Good resistance to:
  - Acids (HCl, citric acid)
  - Alkalis
- Suitable for **container and decorative applications**

## 10. Mechanical Resistance

- Scratch resistant
- Abrasion resistant
- Suitable for exterior architectural use

## 11. Compatibility

- Compatible with most commercial glass substrates
- Works with organic media systems (oil/water based)
- Suitable for multilayer printing

## 12. Colour Range

- Wide range available:
  - White, Black, Red, Yellow, Blue, Green
  - Metallic & special shades
- Custom shades can be developed as per client requirement

## 13. Environmental Compliance

- Lead-free (<100–600 ppm depending on system)
- Compliant with international packaging and safety norms

## 14. Typical Uses Advantage

- Preferred for **export-oriented industries**
- Lower environmental liability
- Safer workplace handling

# LEAD-BASED GLASS COLOURS (600–650°C)

## 1. Product Description

Lead-based glass enamel colours formulated for superior brilliance, flow, and bonding on glass surfaces. These are traditionally used where **high gloss, brightness, and strong adhesion** are required.

## 2. Key Features

- Excellent **flow and leveling**
- Superior **gloss and brightness**
- Strong **adhesion to glass surface**
- Lower firing sensitivity
- Rich and vibrant colour development

## 3. Applications

- Premium perfume and cosmetic bottles
- Decorative glassware
- High-end tableware
- Automotive and appliance glass
- Specialty architectural glass

## 4. Physical Form

- Paste (oil-based / thermoplastic)
- Powder

## 5. Application Methods

- Screen printing
- Spray coating
- Roller coating

## 6. Firing Conditions

- **Furnace temperature:** 600–650°C
- Optimized for **fast firing cycles**
- Excellent fusion and smooth surface formation

## 7. Surface Finish

- High gloss finish (mirror-like)
- Excellent opacity and colour depth
- Smooth surface due to superior melt flow

## 8. Adhesion Properties

- Very strong bonding with glass
- Superior compared to lead-free systems
- Suitable for demanding applications

## 9. Chemical Resistance

- Good resistance to:
  - Mild acids
  - Household chemicals
- Suitable for decorative and semi-functional use

## 10. Mechanical Resistance

- Good scratch resistance
- Durable under normal usage conditions

## 11. Compatibility

- Compatible with standard glass substrates
- Works well with traditional organic media systems

## 12. Colour Range

- Bright and intense colours:
  - Deep reds, oranges, yellows (better than lead-free)
  - Blacks, whites, metallic shades
- Wide customization possible

## 13. Regulatory Note

- Contains lead – use restricted in some export markets
- Suitable mainly for **non-food-contact decorative applications**

## 14. Typical Uses Advantage

- Better **aesthetic quality**
- Easier processing
- More forgiving firing window