

## TECHNICAL DATA SHEET

(Rev. No. 03, Date: 01.06.2022)

### BLS PC 1009

## ADHESIVE PE POLYMER FOR 3 LAYER STEEL PIPE COATING

### DESCRIPTION

**BLS PC 1009** is a maleic anhydride grafted composition based on Polyethylene. It is available in pellet form and can be processed on any extrusion, co-extrusion equipment designed to process polyolefin resin. It has excellent adhesion to HDPE or MDPE and epoxy primer.

The combination **BLS PC 1009** and **BLS PC 5555** or **BLS PC 3333** fulfills the requirements of 3LPE coating system of steel pipe lines having design temperature – 40°C to +80°C and ISO 21809-1, DIN 30670, EIL 6 - 71 – 0041, NF A 49-710, CSA-Z 245.21, Shell DEP 31.40.30.31, IOCL-MECH-COAT-3LPE -027, DNV-GL RP-F 106 standards when used in combination with PE top coats and a compatible fusion bonded epoxy powder under sound processing conditions.

### APPLICATION

**BLS PC 1009** has been designed to develop a reliable bonding strength tie layer between the top coat Polyethylene and the epoxy corrosion protection layer in 3 layer coated steel pipes used for transportation and exploration of natural gas, oil, chemical, liquids, water, etc.

### PROPERTIES

The main properties of **BLS PC 1009** are as given below:

PROPERTY	TEST METHOD	UNIT	TYPICAL VALUE
Density	ASTM D 792 / ISO 1183-1	g/cc	0.932
MFI (190°C/ 2.16 kg)	ASTM D 1238 / ISO 1133-1	g/10 min	1.2
Tensile Strength at Yield (50 mm/min)	ASTM D 638 / ISO 527-2	MPa	>10
Tensile Strength at Break(50 mm/min)	ASTM D 638 / ISO 527-2	MPa	18
Elongation at Break	ASTM D 638 / ISO 527-2	%	700
Hardness	ASTM D 2240 / ISO 868	Shore D	47
Vicat Softening Temperature	ASTM D 1525 / ISO 306	°C	102
Brittleness Temperature	ASTM D 746 / ISO 812	°C	Passed at -76°C
Melting Point	ASTM D 3418 / ISO 3146	°C	123
Peel Strength 3 layer at 23°C	ISO 21809-1, Annex. C	N/mm	>20
Peel Strength 3 layer at 80°C	ISO 21809-1, Annex. C	N/mm	>6
Water Content	ASTM D 6980 / ISO 15512	%	0.04
Flexural Modulus	ASTM D 790	MPa	470

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### PROCESSING

**BLS PC 1009** can be processed in any standard polyolefin processing equipment.

Processing temperature plays the most vital role in adhesion promotion. We recommend minimum melt temperature of 210°C for the best results.

The actual coating condition will depend on the type of equipment used.

As a start-up we suggest to set the following temperature profile for Polymeric Adhesive Compound **BLS PC 1009**

Extruder Barrel: 180 - 220°C

Head: 230 - 240°C

Die: 230 - 240°C

Melt Temperature: 210 - 240°C

PE Melt Temperature: <255°C

Steel Pipe Temperature: **180-210°C**

However, actual temperature profile will depend upon the screw compression ratio, L/D ratio, size of the pipe, type of application technique flat or crosshead die, etc.

### PACKAGING

**BLS PC 1009** is available in 25 kg moisture resistant bags, 650 kg Jumbo bags.

### SHELF LIFE

**BLS PC 1009** must be stored in ambient temperature (not exceeding 50 deg C) in a shaded area in sealed and intact bags to avoid exposure to sunlight and moisture. Long storing may affect the property of the compound and for this reason should be used within 24 months from the compounding date. Improper storage might lead to degradation and irreversible changes in product properties.

It is better to measure the moisture on long storage and dry the material before use after long storage.

### SAFETY

The product is not classified as a hazardous preparation.

Dust and fines from the product carry a risk of dust explosion. All equipment should be properly earthed. Inhalation of dust should be avoided as it may cause irritation of the respiratory system. Small amounts of fumes are generated during processing of the product. Proper ventilation is therefore required. Please refer to our MSDS for details on various aspects of safety, recovery, disposal and handling of the product.

### RECYCLING

The product is suitable for recycling using various methods of shredding and cleaning in-house production waste should be kept clean to facilitate direct recycling.

We offer our Technical Services for further information and suggestion in using the product from the

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beginning and also for any need during the course of the product use.

**Disclaimer:**

The products mentioned herein are not intended for use in medical, pharmaceutical or healthcare applications and we do not support their use for such applications. To the best of our knowledge the information provided herein is accurate and reliable as on date, and is provided in good faith as reference point with respect to the product described here. BLS Polymers makes no warranties which extend beyond the description contained herein. It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products. No liability can be accepted in respect of the use of BLS Polymers products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third party materials. BLS POLYMERS LIMITED

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