

# Polidan® EC/51

Crosslinked Polyethylene

Solvay Specialty Polymers

## Message:

Polidan® XLPE-PEX-crosslinkable polyethylene low-density ductile polyethylene compound is moisture-crosslinkable and contains silane pre-grafted matrix compound used with catalyst masterbatch (SIOPLAS® method).

standards met:-IEC 60502 XLPE, IEC 60092/351, CEI 18-16/351, BS 7655 GP8, VDE 0276 2XI1, HD 604 2XI1,

| General Information                                           |                             |                    |                 |
|---------------------------------------------------------------|-----------------------------|--------------------|-----------------|
| Features                                                      | Low density                 |                    |                 |
|                                                               | Low toxicity                |                    |                 |
|                                                               | Crosslinkable               |                    |                 |
|                                                               | Good flexibility            |                    |                 |
| Uses                                                          | Low voltage insulation      |                    |                 |
|                                                               | Wire and cable applications |                    |                 |
| RoHS Compliance                                               | RoHS compliance             |                    |                 |
| Physical                                                      | Nominal Value               | Unit               | Test Method     |
| Specific Gravity <sup>1</sup>                                 | 0.898                       | g/cm <sup>3</sup>  | ASTM D792       |
| Melt Mass-Flow Rate (MFR) <sup>2</sup> (190°C/2.16 kg)        | 0.35                        | g/10 min           | Internal method |
| Water absorption rate-24 hours(100°C)                         | 0.600                       | mg/cm <sup>2</sup> | IEC 60811       |
| Bending test change-In the air, 240 hours(150°C) <sup>3</sup> | No cracking                 |                    | IEC 60811       |
| Thermoset <sup>4</sup>                                        |                             |                    | IEC 60811       |
| 250°C, maximum permanent elongation after cooling             | 0.0                         | %                  | IEC 60811       |
| 250°C, load elongation at break                               | 50                          | %                  | IEC 60811       |
| Insulation resistance constant                                |                             |                    | IEC 60502       |
| 20°C                                                          | 15000                       | Mohms·km           | IEC 60502       |
| 90°C                                                          | 10000                       | Mohms·km           | IEC 60502       |
| Ring temperature                                              | 170 - 190                   | °C                 |                 |
| Head Temperature                                              | 170 - 190                   | °C                 |                 |
| Hardness                                                      | Nominal Value               | Unit               | Test Method     |
| Durometer Hardness                                            |                             |                    | ISO 868         |
| Shaw A                                                        | 88                          |                    | ISO 868         |
| Shaw D                                                        | 30                          |                    | ISO 868         |
| Mechanical                                                    | Nominal Value               | Unit               | Test Method     |
| Tensile Modulus <sup>5</sup>                                  | 6.10                        | MPa                | IEC 60811       |
| Tensile Strength (Break)                                      | 17.0                        | MPa                | IEC 60811       |
| Tensile Elongation (Break)                                    | 540                         | %                  | IEC 60811       |

| Aging                                                                                                                                                                                                                                                                                                                                                                                                                                                | Nominal Value | Unit    | Test Method |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------|-------------|
| 0.5MPa, change of mechanical properties after air bomb aging test, 127°C, 40 hr                                                                                                                                                                                                                                                                                                                                                                      |               |         | IEC 60811   |
| Tensile strength change                                                                                                                                                                                                                                                                                                                                                                                                                              | 7             | %       | IEC 60811   |
| Change in tensile elongation                                                                                                                                                                                                                                                                                                                                                                                                                         | 6             | %       | IEC 60811   |
| Changes in mechanical properties after hot air aging test, 135°C, 168 hr                                                                                                                                                                                                                                                                                                                                                                             |               |         | IEC 60811   |
| Tensile strength change                                                                                                                                                                                                                                                                                                                                                                                                                              | 2             | %       | IEC 60811   |
| Change in tensile elongation                                                                                                                                                                                                                                                                                                                                                                                                                         | 5             | %       | IEC 60811   |
| Changes in mechanical properties after hot air aging test, 150°C, 168 hr                                                                                                                                                                                                                                                                                                                                                                             |               |         | IEC 60811   |
| Tensile strength change                                                                                                                                                                                                                                                                                                                                                                                                                              | 9             | %       | IEC 60811   |
| Change in tensile elongation                                                                                                                                                                                                                                                                                                                                                                                                                         | -4            | %       | IEC 60811   |
| Electrical                                                                                                                                                                                                                                                                                                                                                                                                                                           | Nominal Value | Unit    | Test Method |
| Volume Resistivity                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |         | IEC 60502   |
| 20°C                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4.1E+15       | ohms·cm | IEC 60502   |
| 90°C                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.7E+15       | ohms·cm | IEC 60502   |
| Dielectric Strength                                                                                                                                                                                                                                                                                                                                                                                                                                  | 35            | kV/mm   | ASTM D149   |
| Dielectric Constant (1 kHz)                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.30          |         | ASTM D150   |
| Dissipation Factor (1 kHz)                                                                                                                                                                                                                                                                                                                                                                                                                           | 6.0E-4        |         | ASTM D150   |
| Additional Information                                                                                                                                                                                                                                                                                                                                                                                                                               |               |         |             |
| <p>测试报告采用挤压或挤出样本获得,添加了 3% 的Catalyst CT/1,在95°C热水中交联2小时.着色PE类母粒按重量添加 0.5-1 %,如果在存储期间吸收了水份,建议预烘干色母粒( 70-80°C下4-6小时).</p> <p>存储</p> <p>产品必须按下列条件存储:</p> <p>--密封,包装袋完好</p> <p>环境温度不超过30°C</p> <p>--避免在阳光下曝晒,或露天放置</p> <p>存放时间过长会造成产品性状改变.</p> <p>保质期: 9个月</p> <p>如果没有满足上述条件,苏威特种聚合物不承担任何责任.</p> <p>包装:</p> <p>采用防潮袋包装. 每袋25 kg,每只货板堆放1375kg.</p> <p>每只纸箱500 kg</p>                                                                                       |               |         |             |
| Extrusion                                                                                                                                                                                                                                                                                                                                                                                                                                            | Nominal Value | Unit    |             |
| Cylinder Zone 1 Temp.                                                                                                                                                                                                                                                                                                                                                                                                                                | 140 - 160     | °C      |             |
| Cylinder Zone 2 Temp.                                                                                                                                                                                                                                                                                                                                                                                                                                | 150 - 170     | °C      |             |
| Cylinder Zone 3 Temp.                                                                                                                                                                                                                                                                                                                                                                                                                                | 160 - 180     | °C      |             |
| Cylinder Zone 4 Temp.                                                                                                                                                                                                                                                                                                                                                                                                                                | 160 - 180     | °C      |             |
| Die Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                      | 180 - 230     | °C      |             |
| Extrusion instructions                                                                                                                                                                                                                                                                                                                                                                                                                               |               |         |             |
| <p>加工: - - POLIDAN® EC/51 预接枝基体树脂必须加用 CT/1母粒促进固化.催化剂量为混合物重量的5%,应在挤塑加工前,2-3小时之内进行配混.最好用挤出机料斗混合.如果催化剂用原始包装密封存储于干燥环境不需要任何预干燥.如需预干燥,可以在50-60°C温度下干燥4-8小时.</p> <p>预接枝基体树脂混和物容易受潮,开袋后需在4小时内使用.预接枝基体树脂不可以预先干燥. 挤塑设备:</p> <p>—热塑性塑料标准挤出机,低压缩比(建议压缩比:1:1.2-1.4,L/D:25,恰当调节机筒温度,螺杆较长,需减少催化剂用量.</p> <p>无需调节螺杆温度</p> <p>-滤网:无</p> <p>建议采用压缩装置 固化: -浸入60-70°C温水中 -暴露于环境中,交联时间取决于环境温度和相对湿度</p> <p>-不管在什么情况下,固化时间都取决于保温厚度,如在温水中强行固化,壁厚 0.7-1.2 mm ,一般需要 3~6 小时.</p> |               |         |             |

| NOTE |                                                   |
|------|---------------------------------------------------|
| 1.   | 23°C                                              |
| 2.   | The test was performed without adding catalyst MB |
| 3.   | Untinned copper                                   |
| 4.   | 20 N/cm <sup>2</sup>                              |
| 5.   | Elongation 150%                                   |

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#### Recommended distributors for this material

### Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

