

# NANCAR® 1053

Acrylonitrile Butadiene Rubber

Nantex Industry Co., Ltd.

## Message:

NANCAR® 1053 is a medium acrylonitrile butadiene copolymer with medium oil resistance. It is polymerized at low temperature and contains sufficient antioxidant for normal aging conditions. It has low Mooney viscosity, and has superior processing characteristics. NANCAR® 1053 is recommended for use in applications requiring improved low temperature properties. It provides excellent extrusions and general processing improvement.

| General Information              |                              |                   |                 |
|----------------------------------|------------------------------|-------------------|-----------------|
| Additive                         | Antioxidant                  |                   |                 |
| Features                         | Antioxidant                  |                   |                 |
|                                  | Copolymer                    |                   |                 |
|                                  | Good Processability          |                   |                 |
|                                  | Low Viscosity                |                   |                 |
|                                  | Oil Resistant                |                   |                 |
| Uses                             | Low Temperature Applications |                   |                 |
| Forms                            | Pellets                      |                   |                 |
| Processing Method                | Extrusion                    |                   |                 |
| Physical                         | Nominal Value                | Unit              | Test Method     |
| Specific Gravity                 | 0.970                        | g/cm <sup>3</sup> |                 |
| Mooney Viscosity (ML 1+4, 100°C) | 52                           | MU                | ASTM D1646      |
| Acrylonitrile Content - Bound    | 29.0                         | %                 | Internal Method |
| Stabilizer                       | Non-staining                 |                   |                 |
| Heat Loss                        | 0.30                         | %                 | ASTM D5688      |
| Hardness                         | Nominal Value                | Unit              | Test Method     |
| Durometer Hardness               |                              |                   | ASTM D2240      |
| Shore A <sup>1</sup>             | 70                           |                   |                 |
| Shore A <sup>2</sup>             | 69                           |                   |                 |
| Shore A <sup>3</sup>             | 68                           |                   |                 |
| Elastomers                       | Nominal Value                | Unit              | Test Method     |
| Tensile Stress                   |                              |                   | ASTM D412       |
| 300% Strain <sup>4</sup>         | 8.24                         | MPa               |                 |
| 300% Strain <sup>5</sup>         | 9.51                         | MPa               |                 |
| 300% Strain <sup>6</sup>         | 10.1                         | MPa               |                 |
| Tensile Strength                 |                              |                   | ASTM D412       |
| Yield <sup>7</sup>               | 25.5                         | MPa               |                 |
| Yield <sup>8</sup>               | 25.8                         | MPa               |                 |
| Yield <sup>9</sup>               | 25.1                         | MPa               |                 |
| Tensile Elongation               |                              |                   | ASTM D412       |

|   |                             |      |             |
|---|-----------------------------|------|-------------|
| Break <sup>10</sup>   | 650                         | %    |             |
| Break <sup>11</sup>   | 610                         | %    |             |
| Break <sup>12</sup>   | 590                         | %    |             |
| Tear Strength   | 55.9                        | kN/m | ASTM D624   |
| Compression Set <sup>13</sup> (100°C, 70 hr)                              | 58                          | %    | ASTM D395   |
| Aging   | Nominal Value               | Unit | Test Method |
| Change in Tensile Strength in Air <sup>14</sup> (100°C, 70 hr)            | -7.0                        | %    | ASTM D865   |
| Change in Ultimate Elongation in Air <sup>15</sup> (100°C, 70 hr)         | -25                         | %    | ASTM D865   |
| Change in Durometer Hardness in Air <sup>16</sup> (Shore A, 100°C, 70 hr) | 4.0                         |      | ASTM D865   |
| Change in Tensile Strength <sup>17</sup>                                  |                             |      | ASTM D471   |
| 100°C, 70 hr, in ASTM #1 Oil  | -9.0                        | %    |             |
| 100°C, 70 hr, in ASTM #3 Oil  | -32                         | %    |             |
| Change in Ultimate Elongation <sup>18</sup>                               |                             |      | ASTM D471   |
| 100°C, 70 hr, in ASTM #1 Oil  | -21                         | %    |             |
| 100°C, 70 hr, in ASTM #3 Oil  | -26                         | %    |             |
| Change in Durometer Hardness <sup>19</sup>                                |                             |      | ASTM D471   |
| Shore A, 100°C, 70 hr, in ASTM #1 Oil                                     | 1.0                         |      |             |
| Shore A, 100°C, 70 hr, in ASTM #3 Oil                                     | -17                         |      |             |
| Change in Volume <sup>20</sup>  |                             |      | ASTM D471   |
| 100°C, 70 hr, in ASTM Oil #1  | 2.3                         | %    |             |
| 100°C, 70 hr, in ASTM Oil #3  | 31                          | %    |             |
| NOTE  |                             |      |             |
| 1.  | Cured for 60.0 min at 150°C |      |             |
| 2.  | Cured for 40.0 min at 150°C |      |             |
| 3.  | Cured for 20.0 min at 150°C |      |             |
| 4.  | Cured for 20.0 min at 150°C |      |             |
| 5.  | Cured for 40.0 min at 150°C |      |             |
| 6.  | Cured for 60.0 min at 150°C |      |             |
| 7.  | Cured for 60.0 min at 150°C |      |             |
| 8.  | Cured for 40.0 min at 150°C |      |             |
| 9.  | Cured for 20.0 min at 150°C |      |             |
| 10.   | Cured for 20.0 min at 150°C |      |             |
| 11.   | Cured for 40.0 min at 150°C |      |             |
| 12.   | Cured for 60.0 min at 150°C |      |             |
| 13.   | Cured for 60.0 min at 150°C |      |             |
| 14.   | Cured for 40.0 min at 150°C |      |             |
| 15.   | Cured for 40.0 min at 150°C |      |             |
| 16.   | Cured for 40.0 min at 150°C |      |             |
| 17.   | Cured for 40.0 min at 150°C |      |             |
| 18.   | Cured for 40.0 min at 150°C |      |             |

|     |                             |
|-----|-----------------------------|
| 19. | Cured for 40.0 min at 150°C |
| 20. | Cured for 40.0 min at 150°C |

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