



# AMPLIFY™ TY 1053H Functional Polymer

## Overview

AMPLIFY™ TY 1053H Functional Polymer is a maleic anhydride grafted (MAH) polymer concentrate designed as a blend component for unmodified polyethylene. In tie layers for flexible packaging, AMPLIFY TY 1053H Functional Polymer promotes adhesion of polyethylene to barrier polymers such as polyamide and ethylene vinyl alcohol (EVOH). The functionality of this polymer also promotes adhesion between metal, polyolefins, cellulose, polyester, polycarbonate, glass, and foil.

Typical blending levels in polyethylene let-down resin are 12-20% for EVOH and 6-12% for nylon.

### Main Characteristics:

- Maleic anhydride modified HDPE
- Adhesive concentrate for use in blown, cast, and coating applications
- Tie layer for food packaging and pipe coating
- Adhesive layer in multi-layer flexible film applications
- Polymer compatibilizer

### Complies with:

- U.S. FDA 21 CFR 177.1520(c)6
- EU, 2002/72/EC

Consult the regulations for complete details.

## Additive

- Antiblock: No
- Slip: No
- Processing Aid: No

| Physical                     | Nominal Value (English) | Nominal Value (SI)      | Test Method                            |
|------------------------------|-------------------------|-------------------------|--|
| Density                      | 0.958 g/cm <sup>3</sup> | 0.958 g/cm <sup>3</sup> | ASTM D792                              |
| Melt Index (190°C/2.16 kg)   | 2.0 g/10 min            | 2.0 g/10 min            | ASTM D1238<br>ISO 1133                 |
| MAH Graft Level              | Very High               | Very High               | Dow Method <sup>1</sup>                |
| Mechanical                   | Nominal Value (English) | Nominal Value (SI)      | Test Method                            |
| Tensile Strength (Break)     | 2300 psi                | 15.9 MPa                | ISO 527-2/51<br>ASTM D638 <sup>2</sup> |
| Tensile Elongation (Break)   | 300 %                   | 300 %                   | ISO 527-2/51<br>ASTM D638 <sup>2</sup> |
| Flexural Modulus - 2% Secant | 134000 psi              | 924 MPa                 | ASTM D790A<br>ISO 178                  |
| Hardness                     | Nominal Value (English) | Nominal Value (SI)      | Test Method                            |
| Durometer Hardness           |                         |                         | ASTM D2240<br>ISO 868                  |
| Shore A                      | 98                      | 98                      |  |
| Shore D                      | 67                      | 67                      |  |
| Thermal                      | Nominal Value (English) | Nominal Value (SI)      | Test Method                            |
| Vicat Softening Temperature  | 264 °F                  | 129 °C                  | ASTM D1525<br>ISO 306                  |
| Melting Temperature (DSC)    | 266 °F                  | 130 °C                  | Dow Method                             |

## Additional Information

Molded in accordance with ASTM D4976.

## Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

<sup>1</sup> Low: <0.25 wt%, Medium 0.25-0.5, High >0.5 wt%, Very High >1.0 wt%.

<sup>2</sup> 2.0 in/min (51 mm/min)

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Published: 2010-02-02

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