

# ABS AF312A

Injection Molding Grade

## Description

Flame Retardant

## Application

Electric parts, IT/OA device  
TV, monitor housing

| Properties                         | Test Condition | Test Method | Unit               | Typical Value |
|------------------------------------|----------------|-------------|--------------------|---------------|
| <b>Physical</b>                    |                |             |                    |               |
| Specific Gravity                   |                | ASTM D792   | -                  | 1.19          |
| Molding Shrinkage (Flow), 3.2mm    |                | ASTM D955   | %                  | 0.4~0.7       |
| Melt Flow Rate                     | 220°C/10kg     | ASTM D1238  | g/10min            | 60            |
| <b>Mechanical</b>                  |                |             |                    |               |
| Tensile Strength, 3.2mm            |                | ASTM D638   |                    |               |
| @ Yield                            | 50mm/min       |             | kg/cm <sup>2</sup> | 450           |
| Tensile Elongation, 3.2mm          |                | ASTM D638   |                    |               |
| @ Yield                            | 50mm/min       |             | %                  | 5             |
| @ Break                            | 50mm/min       |             | %                  | Min 20        |
| Tensile Modulus, 3.2mm             | 1mm/min        | ASTM D638   | kg/cm <sup>2</sup> | 23,000        |
| Flexural Strength, 6.4mm           | 15mm/min       | ASTM D790   | kg/cm <sup>2</sup> | 700           |
| Flexural Modulus, 6.4mm            | 15mm/min       | ASTM D790   | kg/cm <sup>2</sup> | 26,000        |
| IZOD Impact Strength, 6.4mm        |                | ASTM D256   |                    |               |
| (Notched)                          | 23 °C          |             | kg·cm/cm           | 21            |
|                                    | -30 °C         |             | kg·cm/cm           | 7             |
| IZOD Impact Strength, 3.2mm        |                | ASTM D256   |                    |               |
| (Notched)                          | 23 °C          |             | kg·cm/cm           | 25            |
|                                    | -30 °C         |             | kg·cm/cm           | 7             |
| Rockwell Hardness                  | R-Scale        | ASTM D785   | -                  | 105           |
| <b>Thermal</b>                     |                |             |                    |               |
| Heat Deflection Temperature, 6.4mm |                | ASTM D648   |                    |               |
| (Unannealed)                       | 18.6kg         |             | °C                 | 76            |
|                                    | 4.6kg          |             | °C                 | 84            |
| Vicat Softening Temperature        |                | ASTM D1525  |                    |               |
|                                    | 5kg, 50 °C/h   |             | °C                 | 83            |
|                                    | 1kg, 120 °C/h  |             | °C                 |               |
| Flammability                       |                | UL94        |                    |               |
| 1.0mm                              |                |             | class              | HB            |
| 1.5mm                              |                |             | class              | V-0           |
| 2.0mm                              |                |             | class              | V-0,5VB       |
| 2.5mm                              |                |             | class              | V-0,5VA       |
| 3.0mm                              |                |             | class              | V-0,5VA       |
| Relative Temperature Index         |                | UL 746B     |                    |               |
| Electrical                         |                |             | °C                 | 85            |
| Mechanical with Impact             |                |             | °C                 | 75            |
| Mechanical without Impact          |                |             | °C                 | 75            |

Values given should not be interpreted as specification and not be used for part or tool design.

All properties, except melt flow rate are measured on injection moulded specimens and after 48 hours storage at 23 °C, 50% relative humidity.

Updated : 22-Mar-16

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### Processing Guide (Injection Molding)

| Processing Parameters    | Unit               | Value     |           |
|--------------------------|--------------------|-----------|-----------|
| Drying Temperature       | ℃                  | 80 ~90    |           |
| Drying Time              | hrs                | 3 ~ 4     |           |
| Minimum Moisture Content | %                  | 0.01      |           |
| Melt Temperature         | ℃                  | 200 ~ 230 |           |
| Cylinder Temperature     | Rear               | ℃         | 170 ~ 190 |
|                          | Middle             | ℃         | 180 ~ 200 |
|                          | Front              | ℃         | 190 ~ 210 |
| Nozzle Temperature       | ℃                  | 200 ~ 230 |           |
| Mold Temperature         | ℃                  | 40 ~ 60   |           |
| Back Pressure            | kg/cm <sup>2</sup> | 5 ~ 10    |           |
| Screw Speed              | rpm                | 30 ~ 60   |           |

Note) Back Pressure & Screw Speed are only mentioned as general guidelines.

These may not apply or need adjustment in specific situations such as low shot sizes, thin wall molding and gas-assist molding.

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