

**Mitsubishi Chemical Advanced Materials PVC Polyvinyl Chloride, Type I, Grade 1 (ASTM Product Data Sheet)**
**Categories:** Polymer; Thermoplastic; Vinyl (PVC); PVC, Molded

**Material Notes:** Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

| Physical Properties            | Metric     | English    | Comments                      |
|--------------------------------|------------|------------|-------------------------------|
| Specific Gravity               | 1.40 g/cc  | 1.40 g/cc  | ASTM D792                     |
| Water Absorption               | <= 0.040 % | <= 0.040 % | Immersion, 24hr; ASTM D570(2) |
| Water Absorption at Saturation | <= 0.040 % | <= 0.040 % | Immersion; ASTM D570(2)       |

| Mechanical Properties            | Metric     | English        | Comments            |
|----------------------------------|------------|----------------|---------------------|
| Hardness, Shore D                | 89         | 89             | ASTM D2240          |
| Tensile Strength                 | 57.6 MPa   | 8350 psi       | ASTM D638           |
| Tensile Strength at 65°C (150°F) | 3.45 MPa   | 500 psi        | ASTM D638           |
| Elongation at Break              | 5.0 %      | 5.0 %          | ASTM D638           |
| Tensile Modulus                  | 3.21 GPa   | 465 ksi        | ASTM D638           |
| Flexural Strength                | 57.6 MPa   | 8350 psi       | ASTM D790           |
| Flexural Modulus                 | 2.74 GPa   | 398 ksi        | ASTM D790           |
| Compressive Strength             | 82.7 MPa   | 12000 psi      | 10% Def.; ASTM D695 |
| Compressive Modulus              | 2.41 GPa   | 350 ksi        | ASTM D695           |
| Izod Impact, Notched             | 0.214 J/cm | 0.400 ft-lb/in | ASTM D256 Type A    |

| Electrical Properties          | Metric          | English         | Comments  |
|--------------------------------|-----------------|-----------------|-----------|
| Surface Resistivity per Square | >= 1.00e+12 ohm | >= 1.00e+12 ohm | ASTM D257 |

| Thermal Properties                          | Metric                    | English                    | Comments         |
|---|---------------------------|----------------------------|------------------|
| Maximum Service Temperature, Air            | 60.0 °C                   | 140 °F                     | Long Term        |
| Deflection Temperature at 1.8 MPa (264 psi) | 46.7 °C                   | 116 °F                     | ASTM D648        |
| Flammability, UL94                          | V-0<br>@Thickness 3.17 mm | V-0<br>@Thickness 0.125 in | Estimated Rating |

| Compliance Properties | Metric | English | Comments |
|-----------------------|--------|---------|----------|
| 3A-Dairy              | No     | No      |          |
| Canada AG             | No     | No      |          |
| FDA                   | No     | No      |          |
| NSF                   | No     | No      |          |
| USDA                  | No     | No      |          |
| USP Class VI          | No     | No      |          |

| Chemical Resistance Properties  | Metric       | English      | Comments |
|---------------------------------|--------------|--------------|----------|
| Acids, Strong (pH 1-3)          | Limited      | Limited      |          |
| Acids, Weak                     | Acceptable   | Acceptable   |          |
| Alcohols                        | Acceptable   | Acceptable   |          |
| Alkalies, Strong (pH 11-14)     | Acceptable   | Acceptable   |          |
| Alkalies, Weak                  | Acceptable   | Acceptable   |          |
| Chlorinated Solvents            | Limited      | Limited      |          |
| Conductive / Static Dissipative | Yes          | Yes          |          |
| Continuous Sunlight             | Limited      | Limited      |          |
| Hot Water / Steam               | Limited      | Limited      |          |
| Hydrocarbons - Aliphatic        | Limited      | Limited      |          |
| Hydrocarbons - Aromatic         | Limited      | Limited      |          |
| Inorganic Salt Solutions        | Acceptable   | Acceptable   |          |
| Ketones, Esters                 | Unacceptable | Unacceptable |          |

| Descriptive Properties |  |   |                           |
|------------------------|--|---|---------------------------|
| Machinability          |  | 6 | 1-10, 1=Easier to Machine |