

**ABS – Blow Molding Grade****GMN8371****1 Scope**

This specification covers the properties of an ABS homopolymer suitable for use in blow molding operations

1.1 Paintability. Approved paint systems that can be used on this material are listed in the GM Approved Paint on Parts Systems (GM APOPS) database. Criteria for approval of unique plastic/paint systems are also provided. Parts made from this material must meet the requirements of GM4497M.

1.2 Symbol. The material abbreviation according to ISO 11469 is <ABS>

1.3 Typical Application. Typical applications include blow molded spoilers.

1.4 Remarks. This specification is also known as GMN8371.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

ISO 37	ISO 1183/A
ISO 75-1/2	ISO 10350-1
ISO 178	ISO 11469
ISO 180/1	SAE J1885
ISO 294	SAE J1960
ISO 2580-2	ASTM D1238
ISO 3451/1	ASTM D3763

2.2 GM Standards/Specifications.

GM1002M	GM4388M
GM4497M	GMW3059
GMW3001	GMW3221

3 Requirements

3.1 Requirements On Test Specimens. Tests shall be conducted using the latest issue of the test methods indicated. Suitable precautions should be taken to ensure that applicable safe limits are not exceeded when conducting test procedures, processes, and/or handling the materials required by this specification.

3.1.1 Tests shall be conducted 40 h minimum after molding and immediately following a conditioning period of 24 hours per GMW3221 Code A.

3.1.2 Test specimens shall be injection molded according to ISO 294 with conditions for injection molding per ISO 2580-2. Unless otherwise specified, test specimen dimensions are to be in accordance with ISO 10350-1. Property values are the average of an equal number of specimens cut from both the longitudinal and transverse plaque directions.

3.2 Material Requirements. Natural materials must conform to the properties listed in Table 1.

3.3 Paint Performance. Materials must pass the requirements of GM4388M.

3.4 Additional Requirements. Other requirements may be listed on prints, in SORs, or specified by Materials Engineering. Sources for this specification must also file a completed Certification Package containing a Test Sampling Plan with the appropriate Plastics Specialist in the Materials Engineering Department. Blank forms and directions are available from the specialist. Material properties listed in the certification package shall become part of this specification, except those noted as "for information only."



Table 1: Material Property Requirements (Natural/Black)

Mech. Properties	Standard	Unit	Requirement
Density	ISO 1183/A	g/cc	1.029 to 1.06
Heat deflection Temperature @ 1.8 MPa @ .455 MPa	ISO 75-1/2	°C	80 100
Tensile Modulus	ISO 527-1	MPa	700 min
Tensile Strength at Yield	ISO 527-1	MPa	30 min
Flex Modulus	ISO 178	MPa	1400 min
Notched Izod Impact	ISO 180/1A	kJ/m ²	18 min
Multi-Axial Impact @ 23°C @ -30°C	ASTM D3763	J min	26.7 24.3

4 Manufacturing Process

Not applicable.

5 Rules and Regulations

5.1 All materials supplied to this specification must comply with the requirements of GMW3001, **Rules and Regulations for Material Specifications** and GM1002M, **Standard Requirements - Plastics**

5.2 All materials supplied to this specification must comply with the requirements of GMW3059, **Restricted And Reportable Substances for Parts**.

6 Approved Sources

Engineering qualification of an approved source is required for this specification. Only sources listed in the GM Materials File (i.e., MATSPC) under this specification number have been qualified by engineering as meeting the requirements of this specification.

7 Coding System

This material specification shall be referenced in other documents, drawings, VTS, CTS, etc. as follows:

GMP.ABS.025

Or alternatively, as follows:

GMN8371

8 Release and Revisions

8.1 Release. This material specification originated in October, 2001 and was approved by the Styrenics Plastics Specialist in February, 2002. It was first published in December, 2004.

8.2 Revisions

Rev	Approval Date	Description (Organization)
A	MAR 2005	Renumbered 3.3 as 3.4; Added new 3.3; Added Tensile Modulus to Table 1 (Styrenics Plastics Specialist)