

Competence creates Confidence.



• Model no. 1692

ESCR TESTER

ASTM D 1693

ASTM D1693 is a test method for determining environmental stress crack resistance (ESCR) in ethylene plastics. In this test, curved plastic samples are exposed to a wetting agent and the time to crack is measured. The aim is to assess the susceptibility of the material to cracking under certain environmental conditions.



Always stressed

Ten rectangular samples are cut from a moulded sheet produced according to standard procedures. A controlled notch is cut horizontally into each specimen to serve as the cracking starting point. The samples are bent and placed in a C-shaped holder, creating tension in the sample. A diagram of this test method is shown in Figure 1.



ASTM D1693 Standard Test Conditions

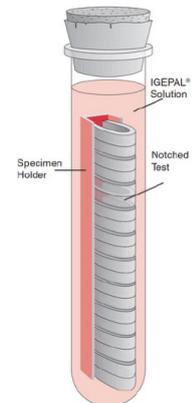
| Condition | Specimen Thickness | | Notch Depth | | Bath Temperature °C |
|----------------|--------------------|------|-----------------|------|---------------------|
| | mm ^A | in. | mm ^A | in. | |
| A ^B | min | 3.00 | 0.120 | 0.50 | 50 |
| | max | 3.30 | 0.130 | 0.65 | |
| B ^C | min | 1.75 | 0.070 | 0.30 | 50 |
| | max | 2.00 | 0.080 | 0.40 | |
| C ^B | min | 1.75 | 0.070 | 0.30 | 100 ^B |
| | max | 2.00 | 0.080 | 0.40 | |

^A Dimensional values are not exactly equivalent. However, for reference purposes, the metric units shall apply.

^B At a temperature of 100°C, a full-strength reagent, rather than an aqueous solution of a reagent, is generally used because solutions tend to change their compositions by water evaporation losses during the test period.

^C For reference purposes, concentration of IGEPAL® will be 10% volume.

The samples and the holder are placed in a pipe filled with IGEPAL solution. The pipe is then placed in a heated environment and regularly inspected for cracks (defects). The solution concentration, ambient temperature and sample dimensions vary depending on the specified test conditions, as shown in Table 1. These different test conditions result in different stresses and strains and allow different polymers to be tested, with results still being available within a short time.



Standard features

- Test tank with digital temperature and control display
- Punch and die set for samples
- Bending clamp for bending samples into a 'U' shape
- 50 glass test tubes and rubber stoppers
- Constant test temperatures due to highly efficient water circulation and precise temperature control in the inner tank
- CE conformity
- Brass sample holder
- Notch device for preparing the samples
- Specimen transfer tools
- Tools for preparing the samples and equipping the device included
- High-quality unit components guarantee high reliability, a long service life and low maintenance costs

Version ESCR TESTER

V1692-0001

| | | |
|--------------------------------------|----|---|
| Temperature range | °C | 50 (method A/B) 100 (method C) |
| Temperature accuracy | °C | ± 1.0 |
| Temperature and control display | | Digital |
| Max. number of test tubes | | 46 |
| Max. number of samples in test tubes | | 10 |
| Permissible ambient temperature | °C | +5 to +30 |
| Permissible relative humidity | % | Max. 70 Non-condensing |
| Width x depth x height | mm | 680 x 570 x 500 |
| Weight | kg | 35 |
| Voltage data | | 230 V 50/60 Hz special voltages on request |