

Ray-Ran



Environmental Stress Cracking Apparatus

RR-ESC

The Ray-Ran **Environmental Stress Cracking Apparatus** determines the susceptibility of ethylene plastics to stress-cracking when exposed to different environments such as soaps, wetting agents, oils and detergents. When the material is under certain conditions of stress, these reagents can accelerate the cracking process, which is one of the most common causes of unexpected brittle failure of polymers known. Designed in accordance with the ASTM D1693 international test standard, the apparatus is extremely cost effective and very simple to use.

Manufactured to a high standard, the apparatus is supplied with electronic digital temperature control, temperature bath and all tooling accessories. The integrated temperature bath fitted with digital temperature controller, heater and a PT100 platinum resistance thermometer accurately maintains the test temperature, usually 50°C or 100°C ± 0.5°C. To ensure temperature stability within the bath, a stirrer motor system is fitted, and the built-in electronic timer monitors the duration of the test. The bath is fitted with a stainless-steel sample rack, which holds up to 48 glass test tubes that are immersed in a heat transfer medium such as silicone oil. Rubber stoppers to seal the tubes and test sample specimen holders in either stainless steel or brass (optional) are also supplied for each tube. The specimen holder is designed to maintain a constant stress on the mid-section of the test samples with up to 10 specimens fitted into a specimen holder at one time.

The unique set of tooling accessories required to produce your test samples include:

- **Test Sample Cutter** – 38mm x 13mm.
- **Sample Nicking Jig** – Used to make a controlled imperfection in the test sample.
- **Sample Bending Clamp** – Used to induce a concentrated stress in the sample.
- **Sample Transfer Tool** – Used to move test samples from the bending clamp into the specimen holders.

To conduct a test, the material is cut to the required shape and marked with a concentrated notch. An induced stress is made on the sample and it is placed into the test sample rack and moved to the test tube, which is filled with the test reagent before being placed into the test bath at a constant temperature. At timed intervals, the samples are checked for any cracks developing at 90° to the notch. The number of failures is recorded.

Technical Specification

- **Simple determination of Stress Cracking**
- **PID electronic temperature control**
- **Resolution 0.1°C**
- **PT100 PRT sensor accurate to 0.1°C**
- **Integrated stirrer motor**
- **Electronic timer HR:MIN:SEC**
- **Stainless steel liquid bath**
- **Sample cutter**
- **Sample nicking jig**
- **Sample bending clamp**
- **Sample specimen holders (Stainless Steel)**
- **48 glass test tubes**
- **Rubber stoppers**
- **Product user manual**
- **CE declaration certificate**
- **1 year return to base warranty**
- **Conforms to ASTM D1693**

Optional Ancillaries

- **Sample specimen holders (Brass)**

Weights & Dimensions

Net Weight (kg)	25
Width (cm)	50
Depth (cm)	40
Height (cm)	50

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