Crumb Rubber Testing

ARDL has extensive experience evaluating and testing recycled polymer products such as crumb rubber. Crumb rubber is a material often used on playgrounds and/or artificial turf sports fields. While this material is very useful in these applications, crumb rubber safety is an important concern. ARDL is able to evaluate and test crumb rubber for a variety of properties from impact properties to analyzing potentially toxic chemicals that can be found in the material. The services ARDL provides include:

- *Extractables/Leachables Testing*
- *Weathering*
- *Instrumented Impact Testing*

Extractables/Leachables Testing

Extractables are chemical species that migrate from a polymer material under aggressive exposure or storage conditions such as high temperature, long duration and contact with solvents or fluids.

Leachables are chemical species that migrate from the polymer under normal conditions of exposure, storage or use.

ARDL offers comprehensive support for extractables and leachables studies, with years of experience in identifying and quantifying organic and inorganic components in a wide variety of recycled polymer products.

Analytical techniques involved in extractables and leachables studies include:

- Gravimetric and Colorimetric Analysis
- Inorganic Species by ICP/MS Analysis
- pH Measurement
- Spectroscopy (UV/VIS, FTIR)
- Organic Species by GC/FID, GC/MS, Pyro-GC/MS, HPLC, LC/MS/MS

Crumb Rubber Testing (cont.)

Weathering Testing Capabilities

Will your recycled polymer product stand up against the elements? Exposing your materials to the elements is an important way to ensure that your components and materials will outperform your competitors. Weathering tests at ARDL measure the performance of materials in real aging environments, simulated environments or accelerated lab environments. Weathering and environmental testing at ARDL includes:

- Carbon Arc Weatherometer Exposure
- Discoloration by UV Staining
- Dynamic Ozone
- Heraeus CPS Sun Test
- Ozone Resistance
- QUV - Operating Light and Water Apparatus
- Salt Fog / Salt Spray
- Water Resistance
- Xenon Arc Exposure
- Fog

Instrumented Impact Testing Capabilities

(ASTM F1292 - Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment)

ARDL provides capabilities to measure the impact attenuation performance of recycled polymer materials for use as playground surfacing material using our engineering department's instrumented impact test set-up. This test is designed to provide load versus deformation response of materials under essentially multiaxial deformation conditions at impact velocities. It further provides a measure of the rate of sensitivity of the material to impact. ARDL provides load and displacement sensor measurements to aid in material selection and design.

ASTM F1292 Laboratory Test Set-Up

We will work with you to determine the proper test methodology and critical fall height. Our lab performs this testing according to the ASTM F1292 specification for impact attenuation, but we can also work with you to develop a custom test set-up.

- Variable Drop Height
- Variable Material Depth
- Environmental Conditioning
- Custom Test Methods

Contact our experts today to discuss your recycled polymer material testing needs and learn more about how ARDL can help.

AKRON RUBBER DEVELOPMENT LABORATORY, INC.
www.ardl.com

2887 Gilchrist Rd. | Akron, Ohio 44305 | answers@ardl.com
Toll Free (866) 778-ARDL | Worldwide (330) 794-6600 | Fax (330) 794-6610