

# advetage solutions

## Demron<sup>TM</sup> ALARA Shield Blanket



The Demron™ ALARA Shield blanket is a contemporary shielding solution for gamma and X-Ray radiation. The fabric can be configured in industry standard shielding blankets or curtain designs as well as in unique, customizable designs.

#### **Key Benefits:**

- Significantly lighter weight (pounds/square foot) compared to lead; Results in reduced resources and person dose required to deploy/ collect
- Non-toxic material; eliminate mixed hazardous waste concerns typically encountered with lead
- Customizable size and thickness solutions; can develop specific solution for given application
- Outer layer of material is easily wiped down/ decontaminated due to Herculite outer layer
- Large Area Blankets/
   Curtains can be designed with grommets or magnets to facilitate easy hanging and attaching to surfaces and locations

Utilizing a patented material that is a mixture of heavy metal and polymers, the ALARA shielding material allows for an industrial shielding solution that is lighter in weight than lead and is Non-Toxic. Therefore, when the Demron material becomes contaminated with residual radioactive contamination it is NOT A MIXED HAZARDOUS Material such as traditional lead.

#### **Custom Use Cases/Industry Example:**

- In-core detector shielding bag
- Reactor Coolant/Demineralizer filter transfer Container shielding
- ♦ 55-gallon drum lid shield covers
- Shielded Work or Hot Tool Bag (used to move material with hot particle)
- ♦ Low Dose shielding Decon Tents
- Fuel Handling Crane and Tool customized shielding
- Neutron Flux (Gamma metrics) detector box slip covers

#### **Blanket Use Cases:**

- ♦ Pipe/component shielding
- Outage/Reactor Head/Cavity shielding
- Rad Monitoring or Contamination/Portal Monitoring shielding
- ♦ Shadow or Large Area shielding
- ♦ Rad Waste/HIC Container shielding
- ♦ Glovebox/sampling skid shielding







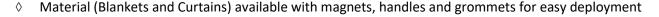
## **OVERVIEW**

### Demron<sup>TM</sup> ALARA Shield Blanket

#### **Characteristics:**

- ♦ Material available in standard 6 or 12 layer thicknesses
- ♦ Industry standard Herculite protective outer layer
- ♦ Approximately 30-45% (or better) attenuation of nuclear power plant standard plant mix gamma fields as measured in numerous Nuclear Plant environments for ALARA (6 layer) blankets. Standard blanket dimensions: 1' x 2' to 1' x 6' standard dimensions
- ♦ Approximately 1.5 pounds/square foot for standard blanket design
- Highly non-flammable material; material heat rating of 370 degrees F;
   non-flammable Herculite outer layer
- ♦ Specific Molecular engineering of material provides attenuation to gamma and X ray radiation and maximum heat dissipation





Non-Toxic, Non-mixed hazardous waste blend of metallic material and polymer beads



	% Reduction using	Plant location of test
	ALARA 6 layer blanket	
Site 1	36%	Reactor Building
Site 2	45%	Rad Waste
Site 3	30%	Rad Waste
Site 4	82%	PWR Reactor Core Barrel
Site 5	24%	PWR CVCS Room

Cs-137 (662 kev) Free Air Irradiation

(at NIST traceable lab; as measured with calibrated EPD's)

Note: Data collected at 2 R/hr, 5 R/hr, and 10 R/hr

	Average % Reduction
ALARA (6-layer) blanket	12%
ALARA+ (12-layer) blanket	19%



