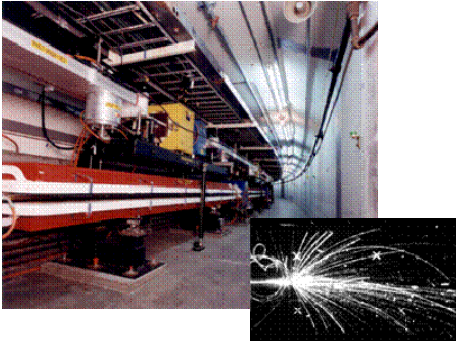




PYROID[®] Long Lived Pyrolytic Graphite Stripper Foils



PEP II Courtesy Stanford Linear Accelerator Center

With beam intensity increasing as a result of improved ion sources, particle accelerators need a long lived stripper foil with high heat transfer for optimum beam focus.

PYROID Long Lived Pyrolytic Graphite stripper foils offer exceptional purity (>99,999%), solid crystal composition, with no granular components. Each foil is capable of withstanding temperature greater than 2500 °C.

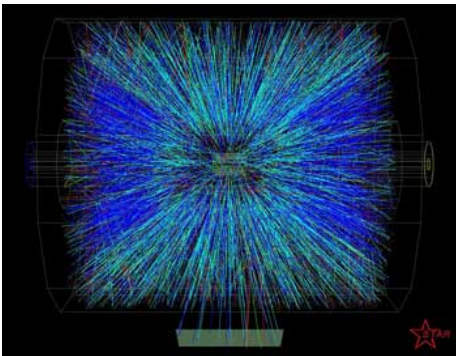
The material conducts heat like copper and offers exceptional physical strength that actually increases with temperature.

Benefits of Pyrolytic Graphite

Pyrolytic graphite foils offer major customer benefits relative to alternative materials.

PYROID Foils features:

- Stable at high temperature with a melting point of 3800 °K (higher than any other material)
- Excellent thermal conduction
- Easy to flex due to inherent higher flexural modulus
- Experience slow erosion rates
- Exceptionally consistent quality and performance
- Higher strength than alternative materials



Particle Collisions
Courtesy of Brookhaven National Laboratory

Resulting in:

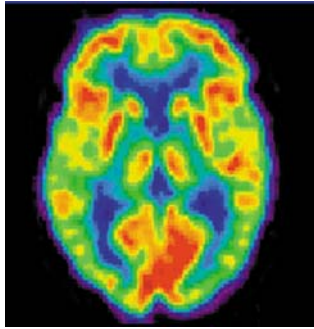
- Robust handling characteristics
- Ability to handle vacuum system changes
- Repeatable stripper foil performance
- Reduced ion source rebuild frequency

Nuclide	Half-Life	Target	Nuclear Reaction
O-15	2 min	N ₂ gas	¹⁴ N(d,n) ¹⁵ O
N-13	10 min	water	¹⁶ O(p,α) ¹³ N
C-11	20 min	N ₂ gas	¹⁴ N(p,α) ¹¹ C
F-18	110 min	¹⁸ O water	¹⁸ O(p,n) ¹⁸ F

Typical PET Radionuclides



MINTEQ



Courtesy ADERC service of the National Institute on Aging

PYROID Pyrolytic Graphite Properties

PROPERTY	
Density	2.22 g/cc
Flexural Strength @2750 °C	3,500 kg/cm ²
Compressive Strength	1,050 kg/cm ²
Thermal Conductivity	345 W/m°K
Scleroscope Hardness	103

PYROID Pyrolytic Graphite foils

Thickness			Areal Density
Microns	Mils	Inch	mg/cm ²
2	0.1	0.0001	0.5
5	0.2	0.0002	1
10	0.4	0.0004	2
12.5	0.5	0.0005	3
15	0.6	0.0006	4
17.5	0.7	0.0007	5
20	0.8	0.0008	6
22.5	0.9	0.0009	7
25	1.0	0.0010	8
50	2.0	0.0020	16
75	3.0	0.0030	24

PYROID Pyrolytic Graphite foils last longer than alternative materials

This is important to the radionuclide manufacturing process and especially when dealing with short half life isotopes of less than two hours, since users can not afford a delay in source production.

The exceptional purity of pyrolytic graphite foils translates to superior beam transmission. Since the beam is more consistently focused on the target, cyclotron users typical see a reduction in ion source rebuild frequency.

Using pyrolytic graphite provides long term security of supply for the radionuclide and PET imaging market.

For Details or Samples Call, FAX or Email