

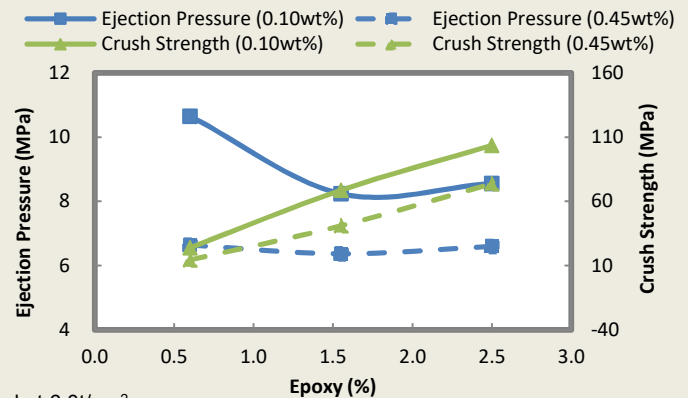
# EFFECT OF EPOXY AMOUNT ON MAGNET PROPERTIES

Crush strength generally exhibits a linear relationship with the epoxy amount

Epoxy Amount (wt%)	Crush Strength (MPa)	Ejection Pressure (MPa)	Lubricant Amount (wt%)
0.60	23.9	10.65	0.10
1.55	68.6	8.24	
2.50	103.5	8.56	
0.60	14.4	6.63	0.45
1.55	41.0	6.37	
2.50	73.7	6.60	

## Test Conditions:

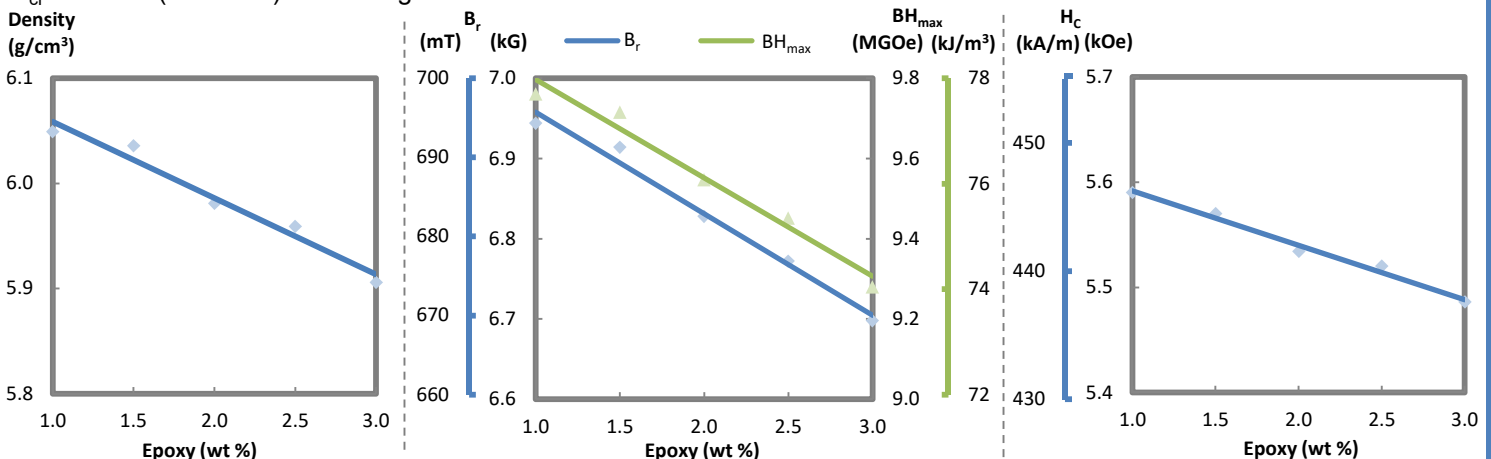
Ejection pressure was measured on cylinder magnets OD6.0 X H10.0mm pressed at 6.0t/cm<sup>2</sup>  
Crush strength was measured on ring magnets OD20.8 X ID18.6 X H5.0mm pressed at 6.0g/cm<sup>3</sup>



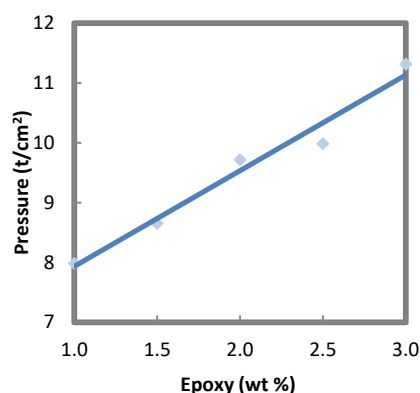
## Impact on magnet properties with different amount of epoxy under fixed pressure

OD9.8 X H6.5mm, PC=2 cylinder magnets pressed under fixed pressure at 9.0t/cm<sup>2</sup>.

H<sub>ci</sub> ~9.8kOe (780kA/m) for all magnets.



## Change in pressure needed to achieve same magnet density for different epoxy rates



OD9.8 X H6.5mm, PC=2 cylinder magnets pressed to achieve density of 6.0g/cm<sup>3</sup>. At constant density, the additional amount of epoxy reduces the amount of magnet material causing decreases in B<sub>r</sub> and BH<sub>max</sub>.

H<sub>ci</sub> ~9.8kOe (780kA/m) for all magnets.

Epoxy Amount (wt%)	B <sub>r</sub> (kG)	B <sub>r</sub> (mT)	H <sub>c</sub> (kOe)	H <sub>c</sub> (kA/m)	BH <sub>max</sub> (MGOe)	BH <sub>max</sub> (kJ/m <sup>3</sup> )
1.0	6.94	694	5.59	445	9.8	78
1.5	6.91	691	5.57	443	9.7	77
2.0	6.83	683	5.53	440	9.6	76
2.5	6.77	677	5.52	439	9.5	75
3.0	6.70	670	5.49	437	9.3	74