

# New OSU Compliant Polycarbonate Developed

- Polycarbonate-like physicals & Processability
- Improved chemical resistance
- Available in opaques (including white)
- Polycarbonate-like optical properties
- Hard coating possible
- Synthesis validated in commercial facility
- Robust performance in:
  - OSU
  - NBS Smoke
  - Toxic gas

## Inherently Lower HRR & Smoke

# Opaque LEXAN\* FST9705 Commercialization Progress

Opaque Grades					
Scale	Monomers Sourcing	Copolymer Synthesis	Compounding	Molding	Customer Validation
Lab					
Commercial				In progress	

## On Track for Commercialization 2<sup>nd</sup> Qtr 07

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# Transparent Commercialization Progress

Scale	Monomers Sourcing	Copolymer Synthesis	Compounding	Extrusion	Hard Coating	Customer Validation
Lab						
Commercial			Pending Appropriate Commercial Interest			

## Technology Ready For Manufacturing Validation

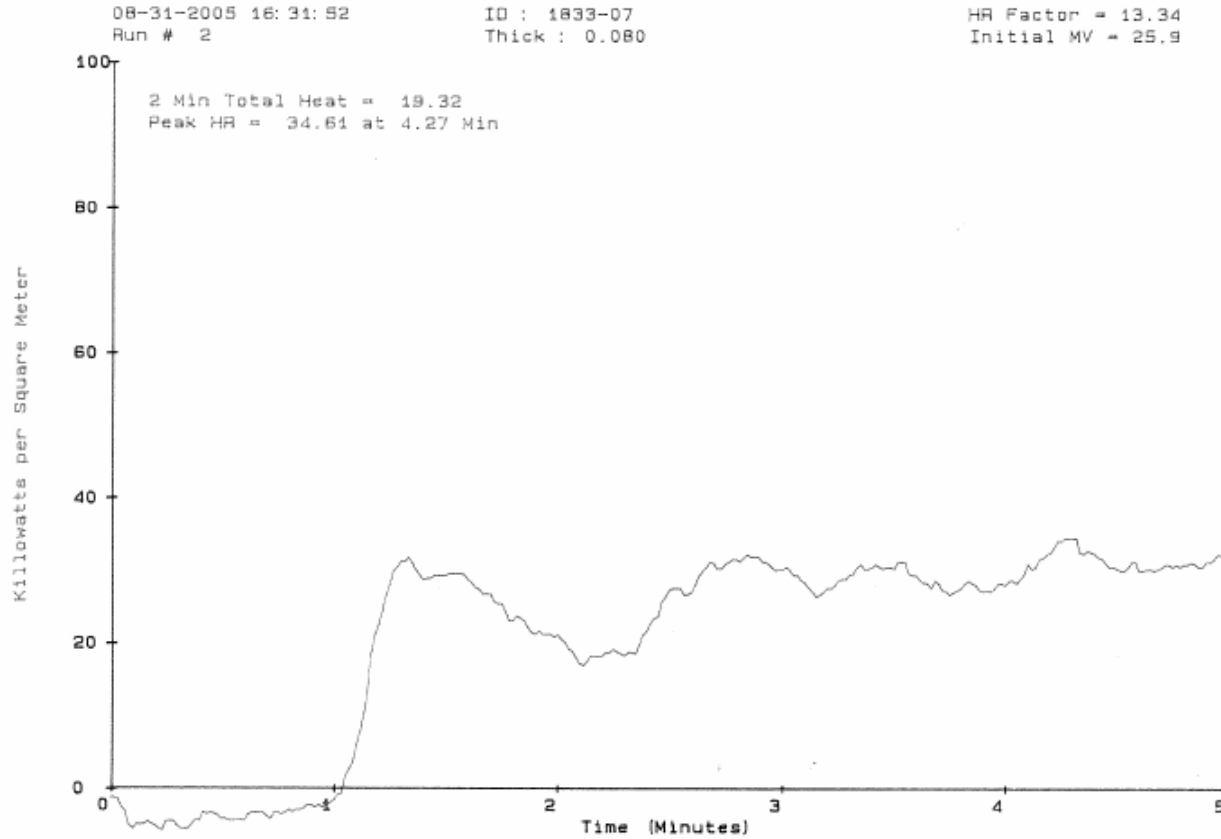
# FAR and Customer Tox. Properties<sup>1</sup>

Property		Units	Opaque (2)		Clear, Hard Coated Sheet (3)	
			0.060"	0.120"	0.080"	0.120" (4)
OSU	2 min total	kw-min/m <sup>2</sup>	20's - 30's	0	24	2
	Peak	kw/m <sup>2</sup>	30's - 40's	30	38	31
60 Sec VB	BT	sec	0		7	
	BL	in	low 2's		3.1	
	LBP	sec	0 - 1		0	
NBS Smoke Density					flaming	
	Ds 1.5		single digits		5	
	Ds 4.0		30's - 40's		37	
Draeger Tube Toxic Gas					flaming	
	HCN	ppm	single digits		<1	
	CO	ppm	100 or less		100	
	NO x	ppm	Trace		<1	
	SO2	ppm	Trace		<1	
	HF	ppm	40 or less		1	
	HCL	ppm	20 or less		1	

1. - Typical properties at third-party lab, as might be seen on a data sheet
2. - Representative of multiple colors and lots
3. - Lab sample
4. - Injection molded, non-hard coated

# Sample OSU Graph

FAR25.853 (d), Part IV OSU Heat Release

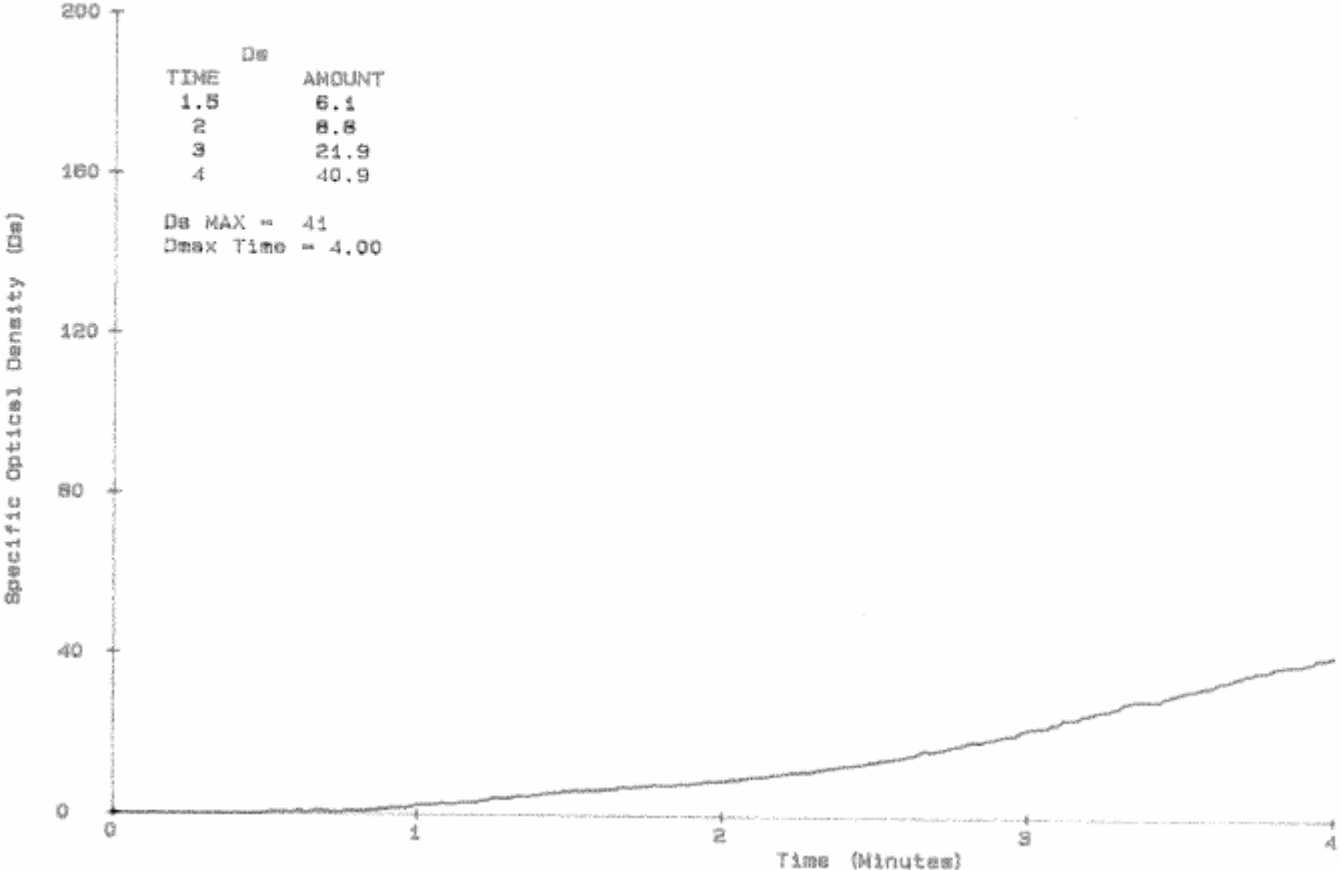


# Sample Smoke Density Graph

ASTM E662 Smoke Density, Flaming Mode

07-26-2006 12:35:04  
Run # 2

ID : 37-13  
Thick : 0.080



# Transparent Resins: Physical Properties

PROPERTY	Units	Method	PC – Not FR	Transparent OSU Resin	Opaque OSU Resin
<b>MECHANICAL</b>					
Tensile Stress at Yield, 50 mm/min	MPa	ASTM D 638	62	74.2	73.9
Tensile Stress at Break, 50 mm/min	MPa	ASTM D 638	66	72.8	60.7
Tensile Elongation at Yield, 50 mm/min	%	ASTM D 638	7	6.9	6.8
Tensile Elongation at Break, 50 mm/min	%	ASTM D 638	110	99	52
Tensile Modulus, 50 mm/min	MPa	ASTM D 638	2,351	2,510	2,420
Flexural Modulus 1.27 mm/min	MPa	ASTM D 790	2,344	2,480	2,470
Flexural Stress@Yield, 1.27mm/min	MPa	ASTM D 790	93	116	114
<b>IMPACT</b>					
Notch Izod Impact, 23°C	J/m	ASTM D 256	801	719	540
<b>THERMAL</b>					
HDT, 0.455MPa	°C	ASTM D 648	138	131	130
HDT, 1.82MPa	°C	ASTM D 648	127	120	117
Tg	°C	DSC	150	140	140
<b>PHYSICAL</b>					
Melt Flow Rate, 300°C/1.2 kgf	g/10 min	ASTM D 1238	10.5	6	6

**Similar to “60 Sec Vertical” PC in Aircraft**

# Transparent Resins: Optical Properties

- Transmission up to 86% (tint dependent) should be possible
- Variety of tints possible – up to opaques
- Haze < 2%

Developmental Values - May Change With Commercialization



# Samples Here Today

<u>Sample</u>	<u>Thickness</u>	<u>%T</u>	<u>YI</u>
MRAC	84mil	90.4	0.56
FST uncoated	74mil	78	-1.16
FST coated	74mil	80.7	-1.15

MRAC from Production, FST's From  
Large Lab-Line

# Summary

- LEXAN FST Resin - Inherent OSU, smoke density/toxicity
- Opaque To Be Commercialized Q2
- Transparent Commercialization TBD
- Physicals and opticals similar to Polycarbonates meeting 60–second vertical.

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