



16E Tuas Avenue 1, #05-61, JTC Space@Tuas Singapore 639537. Tel: +65 6397 5001

TECHNICAL DATA SHEET  
**SYNTHANE A8L-1990M FR**  
Halogen Free, Flame Retardant, Thermoplastic  
Polyether-based Polyurethane.

APR 2024

PROVISIONAL: REV. 01

**DESCRIPTION**

**SYNTHANE A8L-1990M FR** is a halogen free, flame retardant polyether-based polyurethane with good processability for matt requirement. Aside from good mechanical properties, it possesses good hydrolytic stability and fungi resistance. This product is environmental friendly, ROHS compliance and causes no pollution.

Standard compliance:  
ROHS, UL94 V0, VW-1/FT-1.

PHYSICAL PROPERTIES	TEST METHODS	TYPICAL VALUES	UNITS
Appearance	-	Granule	-
Colour		Natural	
Density (23°C)	ASTM D792	1.20	g/cm <sup>3</sup>
Hardness	ASTM D2240	90	Shore A
MECHANICAL PROPERTIES			
Tensile Strength	ASTM D412	14	MPa
100% Modulus		7	MPa
300% Modulus		10	MPa
Elongation at break		400	%
Tear Strength	ASTM D624	70	N/mm
Temperature Resistance	UL 1581	90	° C
Flame Retardancy	UL 94	V0	-
LOI	ASTM D2863	31	%O <sub>2</sub>
Retention Rate of Elongation	ISO 1817	104	%

Notes:

(1) Typical properties are not to be construed as specification. Tests reported are performed on pressed or extruded specimens.



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## APPLICATIONS

1. Use for W&C flexible insulation and jacketing.
2. Suggested for standard wall thickness.
3. Synthane TPU are hygroscopic and should be pre-dried before use. Recommended drying temperature is at 90 – 100 ° C for 3 to 5 hours. The moisture content shall be below 0.05 %.
4. It is recommended that all master-batches should be thoroughly dried at the recommended temperature and time defined by the supplier.

## PROCESSING

1. An extruder with an L/D ratio (length/diameter) of 26 to 32 and an extruder screw with a compression ratio 2.1 – 3.1 are recommended.
2. Depending on the size and type of screw and die, the recommended diameter of breaker plate hole is 1.5 to 5 mm.
3. Low rpm during processing as TPU is shear sensitive.

Zone 1	Zone 2	Zone 3	Zone 4	Collar	Crosshead	Die
160-170°C	170-175°C	170-180°C	170-180°C	170-180°C	170-180°C	170-180°C

*Notes:*

*This profile will vary slightly depending on extruder type, head design and output.*

## STORAGE AND SHELF LIFE

**Synthane A8L-1990M FR** normally has 12 month shelf life from the date of manufacture.

However, the following precautions should be observed.

- Packaging should remain sealed
- Avoid storage outside and in direct sunlight
- Use within 8 hours of opening packaging

Synergychem PTE LTD accepts no liability of any kind in case the above mentioned conditions are not fulfilled.

## TRANSPORT

Not regulated for the transportation.

## PACKAGING

Product is available in 25kg moisture resistance bag on pallet. Different packages are available on customer request. Product is stable if maintained in the original sealed bag and under ordinary storage conditions.

Normal precautions to a good industrial hygiene and safe working place are, generally, sufficient in handling the preparation, however all operators are kindly requested to handle, use and dispose all wastes of the preparation in accordance with the information reported on SDS.