

## **ASA+PC UL94 V0**

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- In order to maintain our delivery capability, we reserve the right to make changes to our standard plastics and/or use materials from different manufacturers at any time and without prior notice.
- We currently use the following ASA+PC-V0 materials:
  - LURAN S KR 2867C WU (UL File No: E108538)
  - ROMILOY 8170 UV (UL File No: E148878)
  - GELOY HRA 222F (UL File No: E45329)
- For material data sheets, see the following pages
- MSDS available on request
- ASA+PC contains SVHCs

Important note regarding the information in material data sheets:

- These data sheets contain guideline values and do not constitute a guarantee of specific properties. The user is responsible for conducting his or her own tests and trials before using our products. This applies in particular to suitability for a specific purpose. We accept no liability for the accuracy or completeness of this information.

No responsibility is accepted for the correctness of this information

Easy flowing injection moulding grade containing bromine-, chlorine- and antimony-free flame retardant. Available in Europe only.

Rheological properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Melt volume-flow rate, MVR	45	cm <sup>3</sup> /10min	ISO 1133
Temperature	260	°C	-
Load	5	kg	-
Molding shrinkage, parallel	0.5	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Tensile Modulus	2600	MPa	ISO 527
Yield stress	61	MPa	ISO 527
Yield strain	4	%	ISO 527
Nominal strain at break	50	%	ISO 527
Impact Strength (Charpy), +23°C	no break	kJ/m <sup>2</sup>	ISO 179/1eU
Impact Strength (Charpy), -30°C	no break	kJ/m <sup>2</sup>	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	16	kJ/m <sup>2</sup>	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	9	kJ/m <sup>2</sup>	ISO 179/1eA

Thermal Properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Temp. of deflection under load (1.80 MPa)	96	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	100	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	105	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	75	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	V-0	class	UL 94
Thickness tested	1.6	mm	-
UL recognition	yes	-	-
Burning Behav. at thickness h	V-0	class	UL 94
Thickness tested	3.0	mm	-
UL recognition	yes	-	-
Oxygen index	30	%	ISO 4589-1/-2

Electrical Properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Relative permittivity, 100Hz	3.1	-	IEC 62631-2-1
Relative permittivity, 1MHz	3	-	IEC 62631-2-1
Dissipation Factor, 100Hz	60	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	100	E-4	IEC 62631-2-1
Volume Resistivity	1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E14	Ohm	IEC 62631-3-2
Comparative tracking index	250	-	IEC 60112

Other Properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Water Absorption	0.4	%	Sim. to ISO 62
Humidity absorption	0.15	%	Sim. to ISO 62
Density	1190	kg/m <sup>3</sup>	ISO 1183

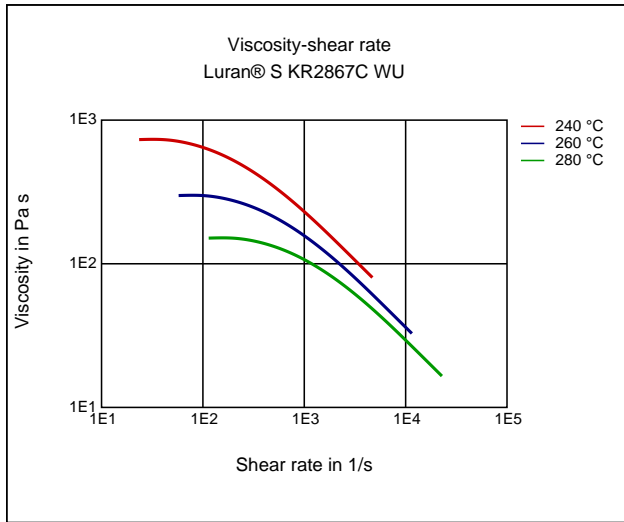
Rheological calculation properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Ejection temperature	100	°C	-

Test specimen production	Value	Unit	Test Standard
<b>ISO Data</b>			
Injection Molding, melt temperature	280	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

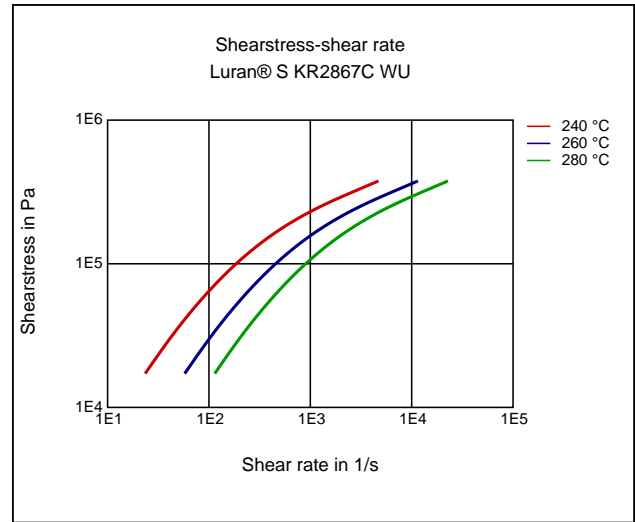
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	85 - 95	°C	-
Pre-drying - Time	2 - 4	h	-
Melt temperature	260 - 280	°C	-
Mold temperature	40 - 60	°C	-

**Diagrams**

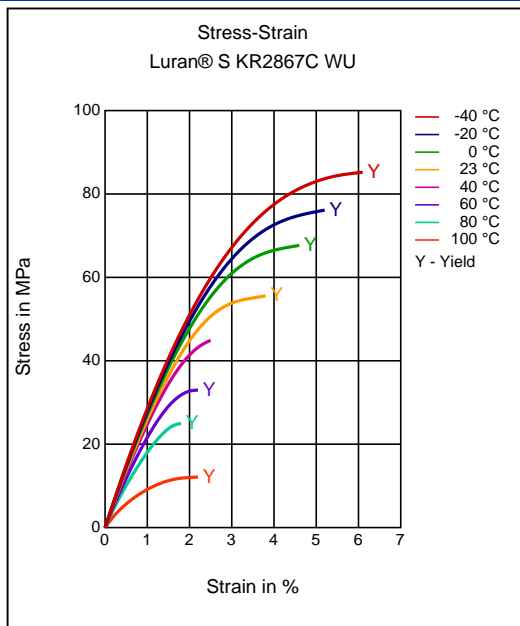
**Viscosity-shear rate**



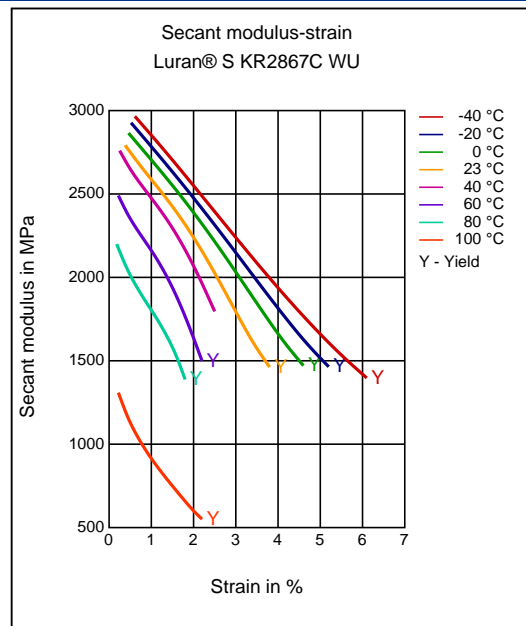
**Shearstress-shear rate**



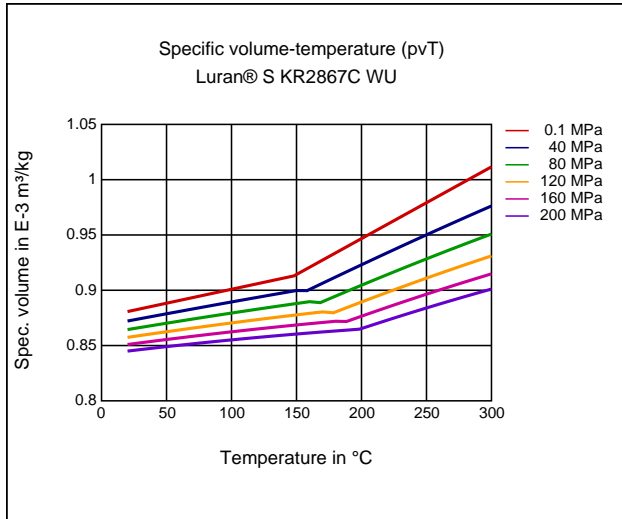
**Stress-strain**



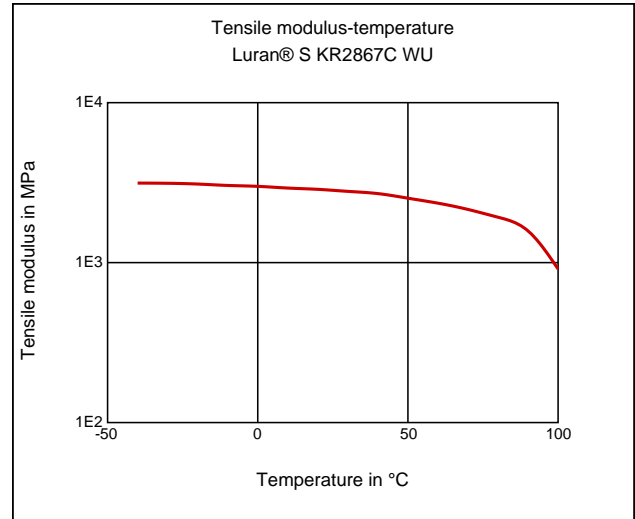
**Secant modulus-strain**



**Specific volume-temperature (pvT)**



**Tensile Modulus-Temperature**



**Characteristics**

**Processing**

Injection Molding

**Delivery form**

Pellets

**Additives**

Release agent

**Special Characteristics**

Light stabilized or stable to light, UV stabilized, Heat aging stabilized

**Injection Molding**

**PREPROCESSING**

Pre/Post-processing, Pre-drying, Temperature: 85 - 95 °C  
Pre/Post-processing, Pre-drying, Time: 2 - 4 h

**PROCESSING**

injection molding, Melt temperature, range: 260 - 280 °C  
injection molding, Melt temperature, recommended: 280 °C  
injection molding, Mold temperature, range: 40 - 60 °C  
injection molding, Mold temperature, recommended: 80 °C

**Chemical Media Resistance**

**Acids**

- ✓ Acetic Acid (5% by mass) (23 °C)
- ✓ Citric Acid solution (10% by mass) (23 °C)
- ✓ Lactic Acid (10% by mass) (23 °C)
- ✓ Nitric Acid (40% by mass) (23 °C)
- ✓ Sulfuric Acid (38% by mass) (23 °C)
- ✓ Sulfuric Acid (5% by mass) (23 °C)
- ✓ Chromic Acid solution (40% by mass) (23 °C)

**Alcohols**

- ✓ Isopropyl alcohol (23 °C)
- ✓ Methanol (23 °C)
- ✓ Ethanol (23 °C)

**Hydrocarbons**

- ✓ n-Hexane (23 °C)
- ✓ iso-Octane (23 °C)

#### Mineral oils

- ✓ SAE 10W40 multigrade motor oil (23 °C)

#### Standard Fuels

- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23 °C)
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23 °C)
- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (23 °C)

#### Salt solutions

- ✓ Sodium Chloride solution (10% by mass) (23 °C)
- ✓ Sodium Hypochlorite solution (10% by mass) (23 °C)
- ✓ Sodium Carbonate solution (20% by mass) (23 °C)
- ✓ Sodium Carbonate solution (2% by mass) (23 °C)
- ✓ Zinc Chloride solution (50% by mass) (23 °C)

#### Other

- ✓ Water (23 °C)
- ✓ Deionized water (90 °C)

#### Disclaimer

##### Liability Exclusion

These guide values are measured and provided by the product manufacturer and have been determined on standardised test specimens and can be affected by pigmentation, mould design and processing conditions. M-Base has taken the guide values from the producer's original Technical Data Sheet. **ALBIS AND M-BASE ARE THEREFORE NOT RESPONSIBLE FOR THE ACCURACY OF THE GUIDE VALUES AND CANNOT GIVE ANY WARRANTY WITH REGARD TO THEIR CORRECTNESS.**

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**Important:** irrespective of product type or designation, ALBIS does not recommend or support the use of any products it supplies which fall into the following medical, pharmaceutical or diagnostic application categories:

- risk class III applications according to EU directive 93/42/EEC
- any bodily implant application for greater than 30 days
- any critical component in any medical device that supports or sustains human life.

At all times, our standard terms and conditions of sale apply.

# TECHNICAL DATA SHEET

## ROMILOY<sup>®</sup> 8170 UV

# ROMIRA

PC/ASA, injection moulding grade, UV stabilized, chlorine-, bromine- and antimon-free flame retardant

PROPERTY	Test Method	Condition	Unit	Value*
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### MECHANICAL.....

Tensile Modulus	DIN EN ISO 527	1 mm/min 23 °C	MPa	2,400
Tensile Strength	DIN EN ISO 527	50 mm/min 23 °C	MPa	63
Elongation at Break	DIN EN ISO 527	50 mm/min 23 °C	%	30
Flexural Modulus	DIN EN ISO 178	2 mm/min 23 °C	MPa	2,600
Flexural Strength	DIN EN ISO 178	2 mm/min 23 °C	MPa	98
Notched Impact Strength (Charpy)	DIN EN ISO 179/1eA	80 x 10 x 4 mm 23 °C	kJ/m <sup>2</sup>	21
Impact Strength (Charpy)	DIN EN ISO 179/1eU	80 x 10 x 4 mm 23 °C	kJ/m <sup>2</sup>	n.b.

### PHYSICAL.....

Density	DIN EN ISO 1183	23 °C	g/cm <sup>3</sup>	1.18
Water Absorption	DIN EN ISO 62	23 °C, 50 % RH, 24 h	%	-

### THERMAL.....

Heat deflection temperature (HDT/A)	DIN EN ISO 75-1	1,8 MPa	°C	76
Vicat Softening Temperature (B 50)	DIN EN ISO 306	50 N, 50 °C/h	°C	102
Melt Mass-Flow Rate (MFR)	DIN EN ISO 1133	240 °C, 5 kg	g/10 min	25
Processing Shrinkage	DIN EN ISO 294-4	23 °C	%	0.4 - 0.7
Glow Wire Flammability Index (GWFI)	DIN EN 60695-2-12	3.0 mm	°C	960
Flammability (File No.: 148878 → UL listed)	UL94	1.5 mm	--	V-0, 5VB

### ELECTRICAL.....

Dielectric Strength	DIN EN 60243-1	1 mm	kV/mm	28
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\* = The given values are guide values only and no binding minimal values or product specifications. Factors as the mould design, processing conditions and colouring of the product may influence the properties. The information is given in good faith and based on our current knowledge, but the actual application is beyond our control. Thus the processors is responsible for carrying out their own tests and experiments. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed. Unless otherwise stated, tests were carried out in a standard atmosphere (23/50).

# GELOY<sup>TM</sup> RESIN HRA222F

REGION EUROPE

## DESCRIPTION

PC/ASA flame retardant, excellent weatherability.

## TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	63	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	56	MPa	ASTM D 638
Tensile Stress, yld, Type I, 5 mm/min	59	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	66	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.3	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	>100	%	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	4.2	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	>100	%	ASTM D 638
Tensile Modulus, 5 mm/min	2590	MPa	ASTM D 638
Tensile Stress, yield, 5 mm/min	62	MPa	ISO 527
Tensile Stress, break, 5 mm/min	51	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	60	MPa	ISO 527
Tensile Stress, break, 50 mm/min	45	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4.3	%	ISO 527
Tensile Strain, break, 5 mm/min	>50	%	ISO 527
Tensile Strain, yield, 50 mm/min	4.4	%	ISO 527
Tensile Strain, break, 50 mm/min	>50	%	ISO 527
Tensile Modulus, 1 mm/min	2520	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	93	MPa	ISO 178
Flexural Modulus, 2 mm/min	2510	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	385	J/m	ASTM D 256
Izod Impact, notched, 0°C	290	J/m	ASTM D 256
Izod Impact, notched 80*10*4 +23°C	17	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	12	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	15	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
CTE, -30°C to 80°C, flow	6.9E-05	1/°C	ISO 11359-2
CTE, -30°C to 80°C, xflow	7.1E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.5E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	111	°C	ISO 306
Vicat Softening Temp, Rate B/50	102	°C	ISO 306
Vicat Softening Temp, Rate B/120	104	°C	ISO 306

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	99	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	88	°C	ISO 75/Ae
<b>PHYSICAL</b>			
Mold Shrinkage on Tensile Bar, flow	0.4 – 0.6	%	SABIC method
Density	1.17	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	0.6	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.2	%	ISO 62
Melt Volume Rate, MVR at 260°C/2.16 kg	13	cm <sup>3</sup> /10 min	ISO 1133
<b>FLAME CHARACTERISTICS</b>			
UL Yellow Card Link	<a href="#">E45329-100183332</a>	-	-
UL Yellow Card Link 2	<a href="#">E45329-462200</a>	-	-
UL Compliant, 94V-0 Flame Class Rating	2	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Oxygen Index (LOI)	29	%	ISO 4589
UV-light, water exposure/immersion	F1	-	UL 746C
<b>INJECTION MOLDING</b>			
Drying Temperature	80 – 90	°C	
Drying Time	2 – 4	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	230 – 270	°C	
Nozzle Temperature	220 – 260	°C	
Front - Zone 3 Temperature	230 – 270	°C	
Middle - Zone 2 Temperature	220 – 260	°C	
Rear - Zone 1 Temperature	200 – 230	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	50 – 70	°C	

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