

# SHELL GTL SARAWAX



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## HIGH QUALITY WAXES FOR A WIDE RANGE OF APPLICATIONS

Shell MDS waxes, under the brand name Shell GTL Sarawax, are specialty waxes produced with high linearity and narrow carbon number distribution, resulting in products suitable for a range of applications ranging from hot melt adhesives, PVC lubricants, printing inks, rubber and tyre to candles, personal care and packaging material.

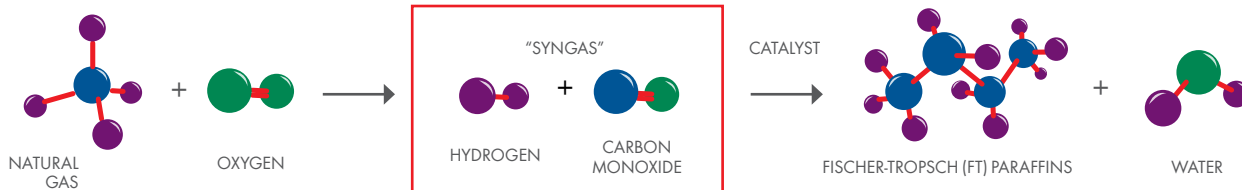
The unique opaque white appearance of Shell MDS waxes produces true colour brilliance with minimum colouring agents, whilst the high purity and consistent properties are ideal for automated and precision industrial applications.

### THE PROCESS



Shell pioneered the Fischer-Tropsch gas-to-liquids (GTL) technology in the full-scale GTL plant in Bintulu, Malaysia, achieving commercial GTL production in 1993.

It is the culmination of more than 20 years of research into the utilisation of natural gas for the production of synthetic waxes, fuels and specialty chemicals, according to the GTL process diagram below.



The whole reaction is irreversible

Key

■ Carbon ■ Hydrogen ■ Oxygen

### STATE-OF-THE-ART WAX PLANT

Our highly automated wax plant with enhanced efficiency and productivity reinforces our position as a leading producer of top quality waxes. With Shell MDS being at the frontier of GTL technology and innovation, we continue to provide long term, sustainable and secure supply of GTL waxes to the market.

Freshly produced slabs transported on our conveyor system, packed into cartons before being palletised by a robotic arm.



Hardwax granules being transferred in 25kg bags and palletised by a robotic arm followed by stretch hood wrapping.



# GLOBAL COVERAGE

## MANUFACTURING, SALES, DISTRIBUTION AND CUSTOMER SERVICE

At Shell, we are committed to high quality as reflected in our policy of strict quality assurance through constant control and monitoring of our manufacturing processes - from incoming feedstock to the finished products.



### PROVEN TRACK RECORD

We continue to build on our excellent customer service track record through our strong sales, marketing and technical teams.

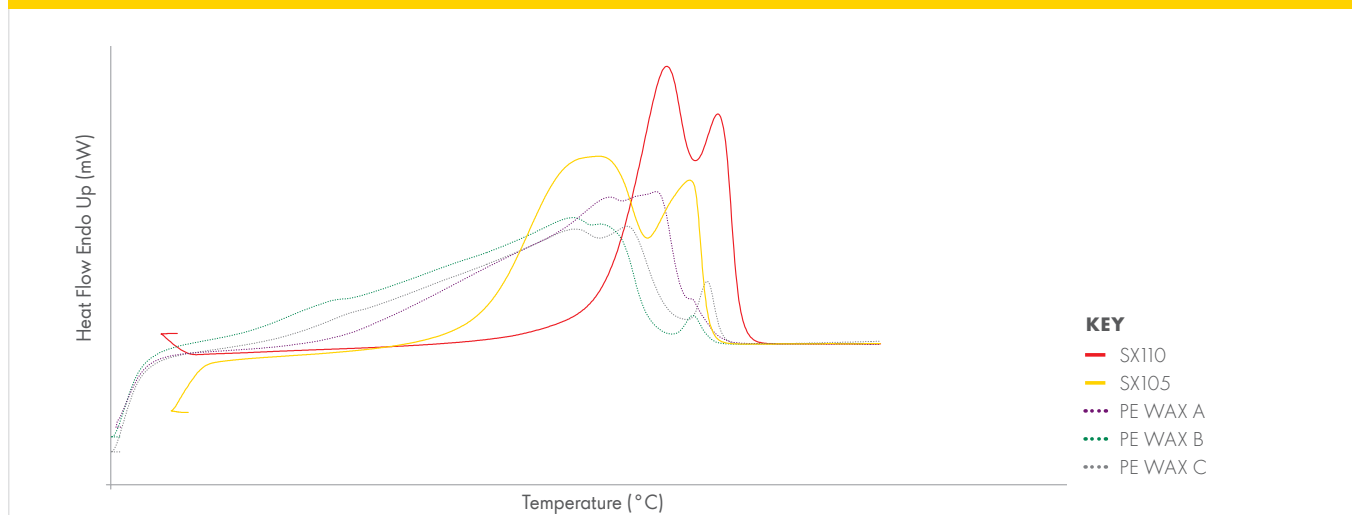
# TECHNICAL SPECIFICATIONS

## TYPICAL VALUES OF SHELL GTL SARAWAX RANGE OF PRODUCTS

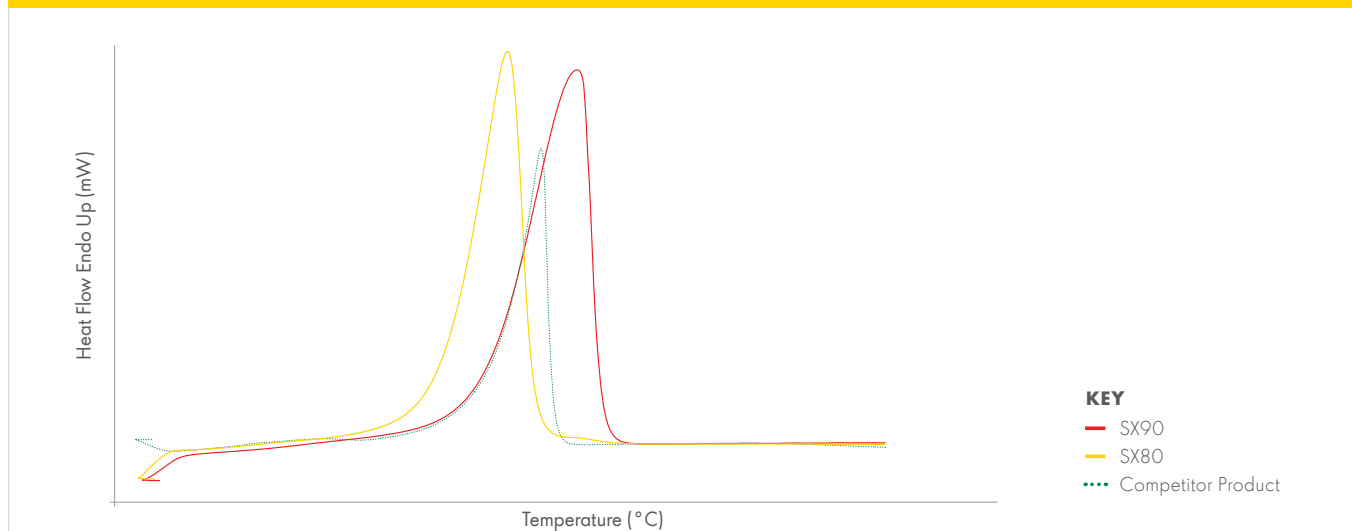
Test Parameters	Unit	Test Method	SX50	SX55R	SX60S	SX70	SX70S	SX80	SX90	SX105	SX110
Congealing Point	°C	ASTM D938	54-56	54-56	60-62	70-72	70-72	82-86	90-95	102-105	106-110
Saybolt Colour	-	ASTM D156	+30	+30	+30	+30	+30	+30	+30	+30	+30
Odour	-	ASTM D1833	<1	<1	<1	<1	<1	Odourless	Odourless	Odourless	Odourless
Oil Content	%m	ASTM D721	2.2-2.4	1.7-2.4	1.4-1.7	0.3-0.5	0.3-0.5	0	0	0	0
UV Absorptivity	L/gcm	ASTM D2008	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Form			Liquid	Slabs	Slabs	Liquid	Slabs	Granules	Granules	Granules	Granules

All Shell GTL Sarawax products comply with the United States Food and Drugs Administration regulations for indirect food contact applications.

### COMPARISON OF DSC CURVES Shell GTL Sarawax SX105 & SX110 vs. Blowdown/by-product polyethylene (PE) waxes



### COMPARISON OF DSC CURVES Shell GTL Sarawax SX80 & SX90 vs. Competitor product





# APPLICATIONS

Applications	SX50	SX55R	SX60S	SX70	SX70S	SX80	SX90	SX105	SX110	Key Features and Benefits
 <p>Hot Melt Adhesives</p>		•	•	•	•	•	•	•	•	<ul style="list-style-type: none"> <li>■ Reduces viscosity to ensure efficient mixing.</li> <li>■ Regulates open and set times.</li> <li>■ Reduces surface tackiness for better transport and storage stability.</li> </ul>
 <p>PVC Lubrication</p>			•	•	•	•	•	•	•	<ul style="list-style-type: none"> <li>■ Reduces energy consumption during PVC processing.</li> <li>■ Provides excellent surface gloss.</li> <li>■ Prevents formation of 'hot spots' which lead to thermal degradation.</li> <li>■ Outstanding metal release enabling high throughput.</li> </ul>
 <p>Inks &amp; Coatings</p>				•	•	•	•	•	•	<ul style="list-style-type: none"> <li>■ Improves rub resistance, anti-scuff and anti-scratch properties.</li> <li>■ Enhances matt effects and water repellence.</li> <li>■ Regulates hardness and slip.</li> </ul>
 <p>Masterbatches</p>								•	•	<ul style="list-style-type: none"> <li>■ Enables excellent pigment wetting for better pigment dispersion.</li> <li>■ Improves the injection moulding process and increases output.</li> <li>■ Enhances gloss in addition to thermal and UV stability.</li> </ul>
 <p>Personal Care/Pharmaceuticals</p>	•	•	•	•	•	•	•	•	•	<ul style="list-style-type: none"> <li>■ Virtually free of sulphur, nitrogen, aromatics and heavy metals offering maximum purity.</li> <li>■ Improves the quality and consistency of the base material in lipsticks, balms, creams and lotions.</li> </ul>
 <p>Candles</p>	•	•	•	•	•					<ul style="list-style-type: none"> <li>■ Its high purity enables clean burning.</li> <li>■ Consistent properties making it suitable to supplement other paraffin or vegetable waxes.</li> <li>■ Good adhesion to glass walls and smooth surface finishing for container candles.</li> </ul>
 <p>Emulsions</p>	•	•	•	•	•					<ul style="list-style-type: none"> <li>■ Impregnate, laminate or coat paper and board packaging material.</li> <li>■ Comply with FDA requirements for packaging of food (fruit, meat, vegetables, sweets).</li> <li>■ Repels water and provides binding properties to wood products used in the construction industry such as MDF (Medium Density Fibreboards) or Particle Boards.</li> </ul>
 <p>Rubber &amp; Tyres</p>		•	•	•	•					<ul style="list-style-type: none"> <li>■ Anti-ozone protection for tyres and other rubber products.</li> </ul>
 <p>Rodenticides</p>		•	•							<ul style="list-style-type: none"> <li>■ Excellent moisture resistance.</li> <li>■ Suitable for use with many ingredients due to its odourless nature.</li> </ul>
 <p>Textile &amp; Polishes</p>		•	•	•	•					<ul style="list-style-type: none"> <li>■ Improves suppleness, lustre and smoothness of fabric.</li> <li>■ Regulates hardness and imparts shine for polishes.</li> </ul>

**Shell MDS (Malaysia) Sdn. Bhd.** (198601003240)

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