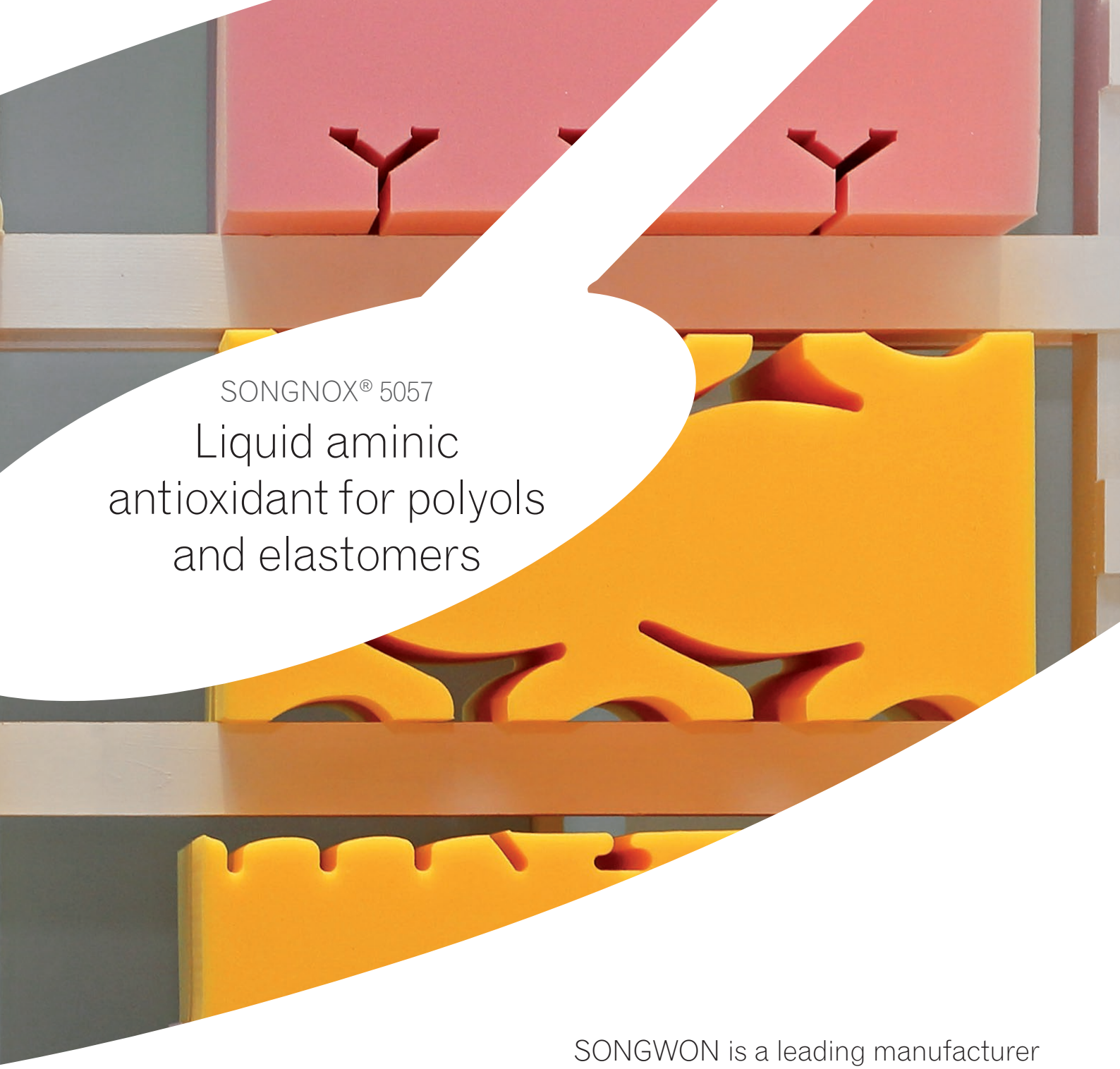


SONGNOX® 5057

Liquid aminic antioxidant for polyols and elastomers

SONGWON is a leading manufacturer of antioxidants for polymers.

New SONGNOX® 5057 extends SONGWON's range of high-performance antioxidants. SONGNOX® 5057 is used in combination with hindered phenols such as SONGNOX® 1135 and SONGNOX® 1076 to protect polyols against degradation during storage and transportation. In addition, this combination prevents scorching (core discoloration) during the manufacture of flexible polyurethane foams.

SONGWON has established a range of aminic and phenolic antioxidants to meet the needs of the polyol and polyurethane industry.

Wide range of antioxidants

Production and supply of industry standard aminic and phenolic antioxidants

Customized solutions for numerous applications

World class production facility in Asia

Comprehensive technical knowhow

Ongoing innovation to meet new industry standards and product requirements

Proven reliability

More than 50 years' manufacturing experience in South Korea

Backward integration of key raw materials

Global sales organization channels in Asia, Europe and North America

Strong commitment

Continuous investment in production facilities for antioxidant ranges

Local supply to ensure efficient logistics

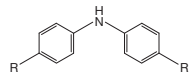
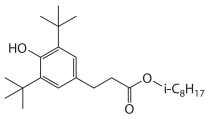
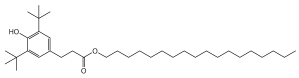
SONGNOX® 5057 extends the breadth and depth of SONGWON's antioxidant product range, meeting customer requirements in the polyol and polyurethane manufacturing industry.

SONGWON® 5057

- complements SONGWON's existing range of phenolic antioxidants, providing polyols and polyurethane with excellent protection against thermo-oxidative degradation.
- is designed for flexible polyurethane slabstock foams, elastomers and hot melt adhesives.
- is used in combination with hindered phenols such as SONGNOX® 1135 or SONGNOX® 1076 LQ by polyol and slabstock foam producers seeking less volatile alternatives to dibutylhydroxytoluene (BHT). These combinations help to:
  - protect polyols against oxidation during storage and transportation (degradation of the polyol and the urethane components causes changes in the physical and mechanical properties of the polyurethane foam).
  - prevent scorching, i.e., discoloration in the center of the foam, during manufacture of flexible polyurethane slabstock foams (scorching is caused by the exothermic reaction between polyols, diisocyanates and water. Since polyurethane is a good insulator, the foam center remains hot for several hours after foaming, increasing the risk of scorching).

SONGNOX® 5721 is a liquid blend of SONGNOX® 5057 and SONGNOX® 1135 that is especially easy to incorporate in polyols.

SONGNOX® 5057 is widely used in the stabilization of polyols and polyurethanes both for industrial and automotive applications.

	Chemical structure	Molecular weight	Specific gravity at 20°C	Viscosity (mPas, 40°C)	Viscosity (mPas, 60°C)	Solubility (g/100 g solvent at 25 °C)	TGA (°C, % mass loss)
SONGNOX® 5057 LQ		Mixture of butyl, octyl diphenylamine	0.960 ~ 1.000	200 - 500	50 - 100	Squalane > 50 n-Hexane > 50 Acetone > 50 Ethanol > 50 Toluene > 50 Xylene > 50 Ethyl acetate > 50	235 5% 255 10% 320 50%
SONGNOX® 1135 LQ		390	0.950 - 0.990	95 - 150	20 - 50	Squalane > 50 n-Hexane > 50 Acetone > 50 Ethanol > 50 Toluene > 50 Xylene > 50 Ethyl acetate > 50	257 5% 278 10% 328 50%
SONGNOX® 1076 LQ		531	-	solid	30 - 60	Squalane 0.5 n-Hexane > 50 Acetone > 50 Ethanol < 0.1 Toluene > 50 Xylene > 50 Ethyl acetate > 50	330 5% 347 10% 387 50%

Blends	**SONGNOX® 1135**	**SONGNOX® 5057**	**Physical Form**
SONGNOX® 5721	2	1	LQ

Storage conditions

SONGNOX® 5057 antioxidant is supplied in liquid (LQ) form.

The material should be stored indoors, in closed containers, in a dry place at temperatures between 5 and 40°C.

Shelf life

SONGNOX® products are stable for 24 months, provided they are stored under the conditions described above.

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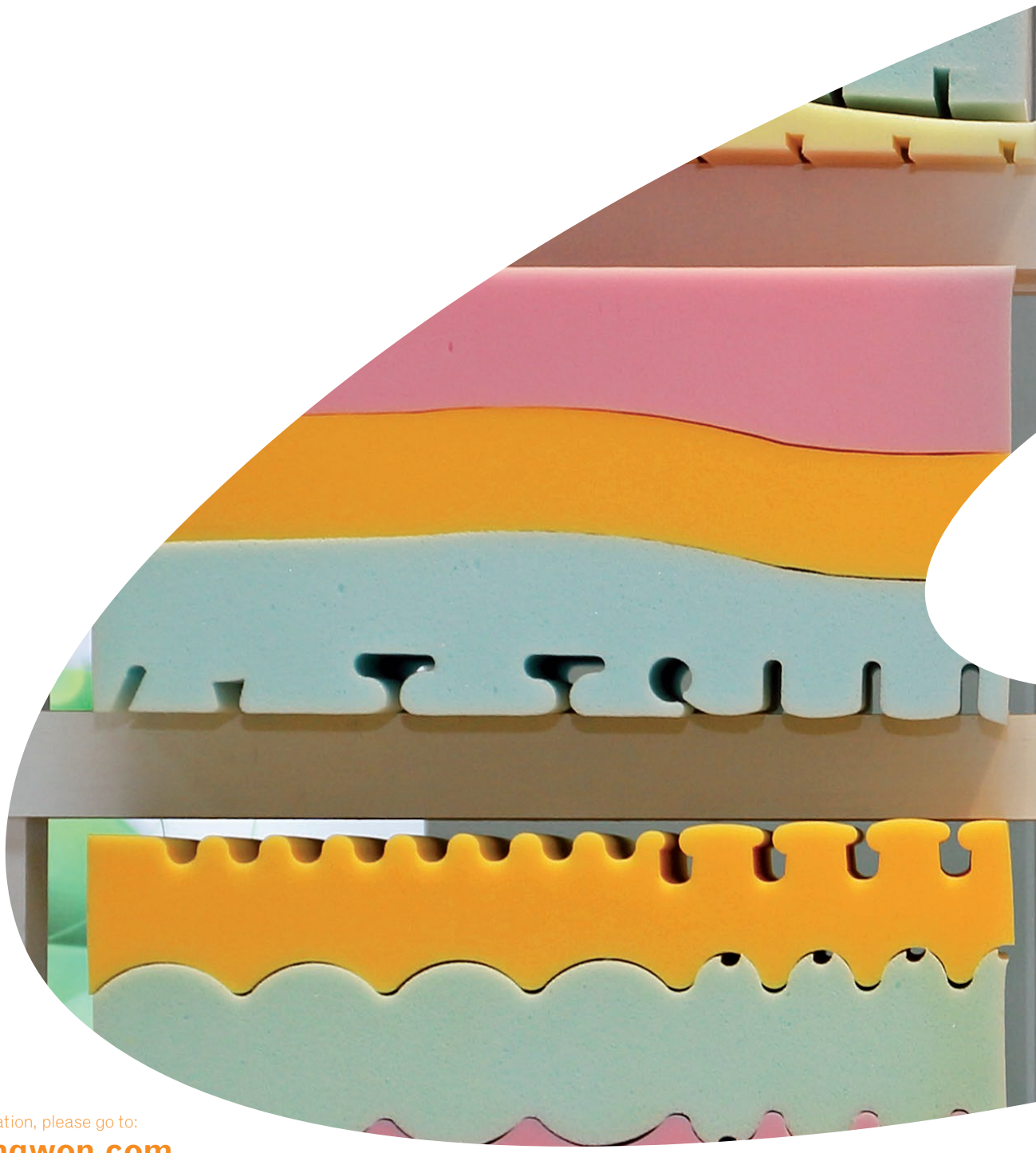

For further information, please go to:

www.songwon.com

techservice@songwon.com

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Version 1, April 2019

Please be aware that the use of the product in certain applications may be subject to patent protection in some countries.

Please consult your SONGWON representative for more information.

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