

Sunbesta® and Sunbesta® ZV Multi-layer Fuel Hose

Fueling Today's Requirements and Tomorrow's Challenges

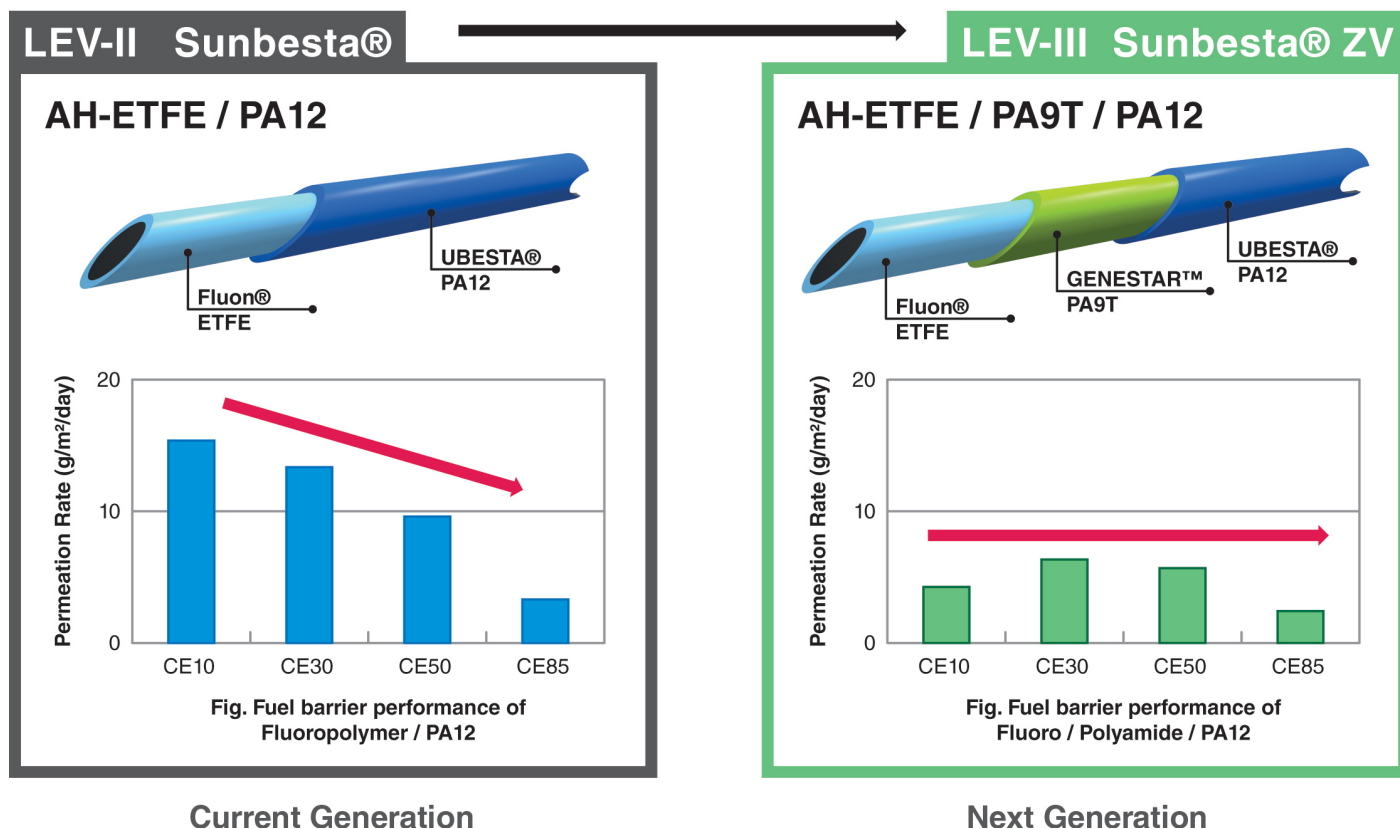
As the evaporative emission standards for cars become more severe year-by-year, lower fuel permeation and better adhesion properties are required. Overall performance is improved by using AGC's two-layer tube system Sunbesta®, which the automotive market has utilized globally for years.

AGC is pleased to announce the release of Sunbesta ZV... the next generation in fuel hose systems which offers superior performance, meeting tomorrow's standards, today!

Sunbesta ZV tubing was jointly developed by AGC (Fluon® ETFE), Kuraray (GENESTAR™ PA9T) and UBE (UBESTA® Nylon 12).

Kind of Fuel

Fuel – C : isooctane + toluene = 50 : 50 (vol%) CE 10 , 30 , 50 , 85 : Fuel – C + ethanol (vol%)
Temp = 60°C





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Technology

- Excellent resistance to all fuels (including wide alcohol content)
- Superior anti-static properties*
- Applicable for Urea tube for SCR/EGR systems
- Will decrease NOX content of exhaust
- Excellent adhesion and flexibility
- Lower fuel permeation
- Long-lasting performance

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Performance Data to Specification SAE J2260

SAE J2260 Section	Item	Detail	Units	Sunbesta	Sunbesta ZV
Tubing Construction					
	Outer Layer			Ubesta 3030JI6L	Ubesta 3030JI26L
	Middle Layer			-	Genestar N1001D U83/02
	Inner Layer			*Fluon AH-3000L ETFE	*Fluon AH-3000L ETFE
	OD		mm	8 ± 0.1	8 ± 0.1
	Wall Thickness		mm	1 ± 0.1	1 ± 0.1
Burst Properties					
7.1	Room Temp Burst Test	at 23°C	Mpa	7.1	7.1
7.2	High Temp Burst Test	at 115°C for 2 hrs	Mpa	2.5	2.6
7.4	After Kinking	at 23°C	Mpa	6.6	7
7.6	After Fuel Exposure	1000 hrs CE10 at 60°C	Mpa	6.2	6.5
		1000 hrs CM15 at 60°C	Mpa	6.6	6.3
7.14	Auto-oxidized Fuel Test	1000 hrs at 40°C	Mpa	6.3	6.2
	After Heat Aging and Cold Impact	1000 hrs at 90°C then 48 hrs at 115°C then cold impact	Mpa	9.1	11.9
Cold Impact Properties					
7.5	Initial Value	4 hrs at -40°C		no crack	no crack
7.6	After Fuel Exposure	1000 hrs CE10 at 60°C		no crack	no crack
7.7	After Methanol Exposure	1000 hrs CM15 at 60°C		no crack	no crack
7.8	Auto-oxidized Fuel Test	1000 hrs at 40°C		no crack	no crack
7.12	Zinc Chloride Resistance	200 hrs immersion at 23°C then 24 hrs dry at 23°C		no crack	no crack
Layer Adhesion					
7.6	After Fuel Exposure	1000 hrs CE10 at 60°C		no delamination	no delamination
7.7	After Methanol Exposure	1000 hrs CM15 at 60°C		no delamination	no delamination
7.8	Auto-oxidized Fuel Test	1000 hrs at 40°C		no delamination	no delamination
Electrical Resistance					

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7.9	Initial Value	at 23°C	ohm/sq	3.7×10^5	6.0×10^3
7.4	After Kinking	at 23°C	ohm/sq	1.3×10^6	9.0×10^3
7.5	After Cold Impact	4 hrs at -40°C	ohm/sq	3.2×10^5	6.0×10^3
7.6	After Fuel Exposure	1000hrs CE10 at 60°C	ohm/sq	2.8×10^5	8.0×10^3

* Conductive Materials Used

**AGC Chemicals Company
AGC Inc.**

Shin-Marunouchi Bldg.
1-5-1 Marunouchi
Chiyoda-ku, Tokyo
100-8405 Japan
Tel: +81-3-3218-5438
www.agc-chemicals.com

AGC Asia Pacific Pte., Ltd.

460 Alexandra Road
#32-01 mTower
Singapore 119963
Tel: +65 6273 5656
www.agc-asiapacific.com

**AGC Chemicals Trading
(Shanghai) Inc.**

Room 4008/09, F40, T1
Raffles City Changning
No.1133 Changning Road
Shanghai, China 200051
Tel: +86-21-6386-2211
www.agcsh.com

**AGC Chemicals
(Thailand) Co., Ltd.**

944 Mitrtown Office Tower, 14th Floor
Rama 4 Road, Wangmai Sub-District
Pathumwan District, Bangkok 10330
Thailand
Tel: +66-2-092-6499
www.acth.co.th

AGC Chemicals Europe, Ltd.

Hillhouse International
Fleetwood Road North
Thornton-Cleveleys
FY5 4QD
United Kingdom
Tel: +44 (0) 1253 209560
www.agcce.com

**AGC Chemicals Europe, Ltd.
Commercial Centre**

World Trade Center, Zuidplein 80
1077 XV Amsterdam, Netherlands
Tel: +31-(0)-20-880-41-70
www.agcce.com

AGC Chemicals RUS

Russian Federation, 121596
Moscow, Gorbunova Street 2
Grand Setun Plaza, Bldg. 204, BC
5th Floor, Block B, Office B 504
Tel: +7-918-555-34-37
www.agcce.com

AGC Vidros do Brasil Ltda.

Estrada Municipal Doutor Jaime
Eduardo Ribeiro Pereira, 500
Jardim Vista Alegre
Guaratinguetá, SP, Brasil
CEP 12523-671
Tel: +55 12 3127-7100
www.agcchem.com/pt-br/



**Chemistry
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AGC Chemicals Americas, Inc.

55 E. Uwchlan Avenue, Suite 201
Exton, PA 19341
United States of America

Telephone: +1 610-423-4300
Toll Free (US only): 800-424-7833
Fax: +1 610-423-4305

www.agcchem.com

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