# F-CLEAN<sub>TM</sub>



High durability film for greenhouse

**AGC Inc.** 

#### What if?



- What if gardeners and farmers could improve the growth efficiency of their greenhouse plants, vegetables and fruits?
- What if all it took was the ability to capture more sunlight to result in earlier blooms, more vibrant petals, sweeter fruits and higher quality vegetables?





#### **Solution**



- It's possible with AGC Inc. group's technology named F-CLEAN™, high-performance film for greenhouse.
- F-CLEAN allows users to grow high-quality and high value-added crops, within a variety of applications.



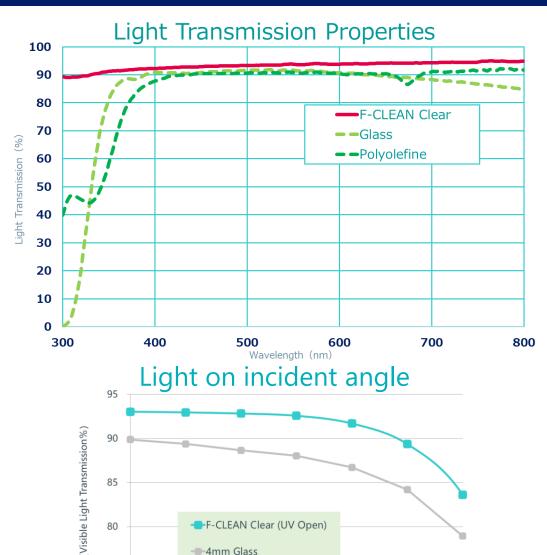
- High transparency
- Excellent weatherability
- Non-Stick Properties
- High mechanical resistance



#### Full benefit of Sunlight



- The transmission of F-CLEAN is much better than glass, polyethylene or polycarbonate.
- F-CLEAN offers very good light transmission at all incident angle because of its low reflection rate.
- As a result, F-CLEAN allows the full spectrum of solar light to pass into the greenhouse giving you maximum benefit for more production.



75

10

20

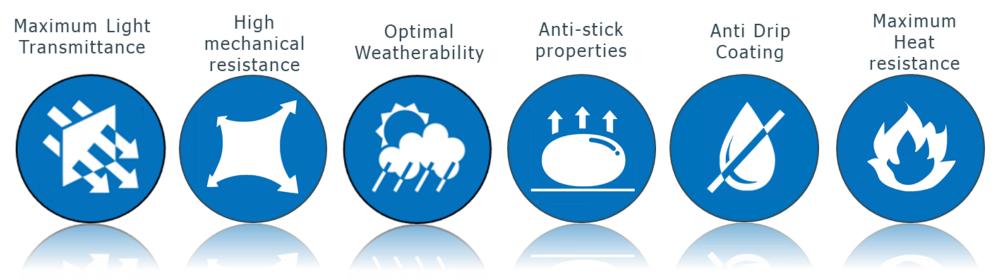
Incident Angle (°

50

#### **Characteristics**



- AGC offers the technology to control the quality, quantity and the spectrum of sun-light.
- You can use F-CLEAN anywhere on this planet from extremely cold climate to very hot and dry climate.



#### **Technology / History**



# ■ F-CLEAN is made with AGC Fluon® ETFE resin, and we have top share in this market.



long chain of Chemical reactions...



Melted and extruded into film



ETFE film

AGC introduced ETFE-film into the

ETFE resin was first synthesized.

1970's

1980's

greenhouse market.



1990's

Many grades developed under F-CLEAN brand.



Over 40 million m<sup>2</sup> of F-CLEAN was sold.

~Today



#### **Business record in the world**



- Since 1985, we have sold a cumulative area of F-CLEAN™ of about 4,000 ha.
- Projects widely vary in size (300 m<sup>2</sup> to 200,000 m<sup>2</sup>).
- Larger scale tends to generate better efficiency, while taller structures tend to have better climate conditions inside.



F-CLEAN™ WORLDWIDE PROJECTS

#### Who we are:



## AGC

Company name TSE code **Established** Representative director **Paid-in capital** Consolidated net sales Consolidated no. of employees No. of consolidated subsidiaries 206 companies

(\*1) 1 JPN=0.008 USD

(\*2) As of end-December 21.

Representative director President & CEO Yoshinori Hirai

AGC Inc. 5201

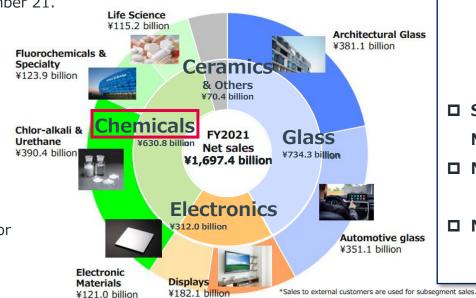
September 8, 1907

Yoshinori Hirai \$7.3 billion (\*1)

\$162.9 billion (\*1)

55,999 (\*2)

(of which 169 are overseas) (\*2)



~ Shareholder notes ~

□ Fiscal close

December 31

■ Annual general shareholders' meeting

March of each year

□ Date of record

Annual general shareholders' meeting

December 31

Year-end dividend

December 31

Interim dividend

June 30

☐ Shareholder registry administrator

Mitsubishi UFJ Trust and Banking Corporation

■ Number of shares per unit

100 shares

■ Number of shares outstanding

227,441,381 shares

#### **AGC's Overseas Business Development**



年	Europe/EMEA
1981	【Belgium】Asahi Glass acquires Glaverbel S.A., (AGC Glass Europe S.A.) a glass company in Belgium. First entry into Europe.
1997	[Russia] Capital participation made in Bor Glassworks (OJSC AGC Bor Glassworks). First entry into the Russian market.
1999	[UK] Imperial Chemical Industries PLC's (AGC Chemicals Europe, Ltd.) fluoropolymers business acquired. Production of fluorochemicals begins in Europe.
2004	[Hungary] AGC Automotive Hungary Ltd. established. Production of automotive glass begins in Hungary.
2012	【Germany】Strategic partnership with Interpane in Germany (Became a consolidated subsidiary)
2015	【Poland】AGC acquires NordGlass, automotive replacement glass company in Poland.
2019	[Morocco] Automotive Glass Production Base established in Morocco.
2020	AGC Biologics Expands Cell and Gene Therapy CDMO Services

<sup>\*</sup>This list shows AGC's first entry into the region.

年	ASIA/Japan
1907	[Japan]1907 Asahi Glass Company founded.
1956	[India]Glass production begins in India.
1964	AGC becomes one of the first Japanese private companies to enter the Indian market.
1972	【Thailand】Thai Asahi Glass Public Co., Ltd. (AGC Flat Glass (Thailand) Public Co., Ltd.) established.
1992	【Indonesia】P.T. Asahimas Flat Glass Co., Ltd. established in Indonesia. First entry into the Indonesian market.
2000	【China】 Dalian Asahi Float Glass Co., Ltd. (now AGC Flat Glass (Dalian) Co., Ltd.) established in China. Production of flat glass begins in China.
2003	【Taiwan】 Asahi Glass Fine Techno Taiwan Co., Ltd. (AGC Display Glass Taiwan Co., Ltd.) established. Production of LCD glass substrates begins in Taiwan.
2014	【Korea】At Hanwook Techno Glass Co., Ltd., production of PDP glass substrates begins in Korea.
	【Vietnam】AGC acquire a Vietnamese polyvinyl chloride (PVC) company, Phu My Plastics & Chemicals Co., Ltd.
2017	【Saudi Arabia】AGC and Obeikan Glass agreed to set up a JV for architectural glass.
	[Thailand]Acquires Vinythai PCL

年	Americas
1985	【USA】AP Technoglass Co. (Automotive glass division in AGC Flat Glass North America, Inc.) established. Production of automotive glass begins in the USA.
2011	【Brazil】AGC Glass Brazil, Inc. established. First entry into the Brazilian market.
2013	[Mexico] AGC Automotive Mexico S. DE R.L. DE C.V. established.
2018	【USA】 AGC acquires the electronics business of US-based Park Electrochemical
	【USA】 AGC Biologics, consolidated and integrated management for bioscience business.
2019	【USA】AGC acquires global operations of the Advanced Dielectric Division of US based Taconic
2020	【USA】 AGC Acquires Biopharmaceutical Commercial Facility in Colorado, U.S.A.

#### **AGC Chemicals Europe, Ltd.**

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#### For more information

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### Your Dreams, Our Challenge

Never take the easy way out, but confront difficulties

Trust is the best way to inspire people

Strive to develop technologies that will change the world

A sense of mission leads us to advance

#### **AGC Inc.**

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