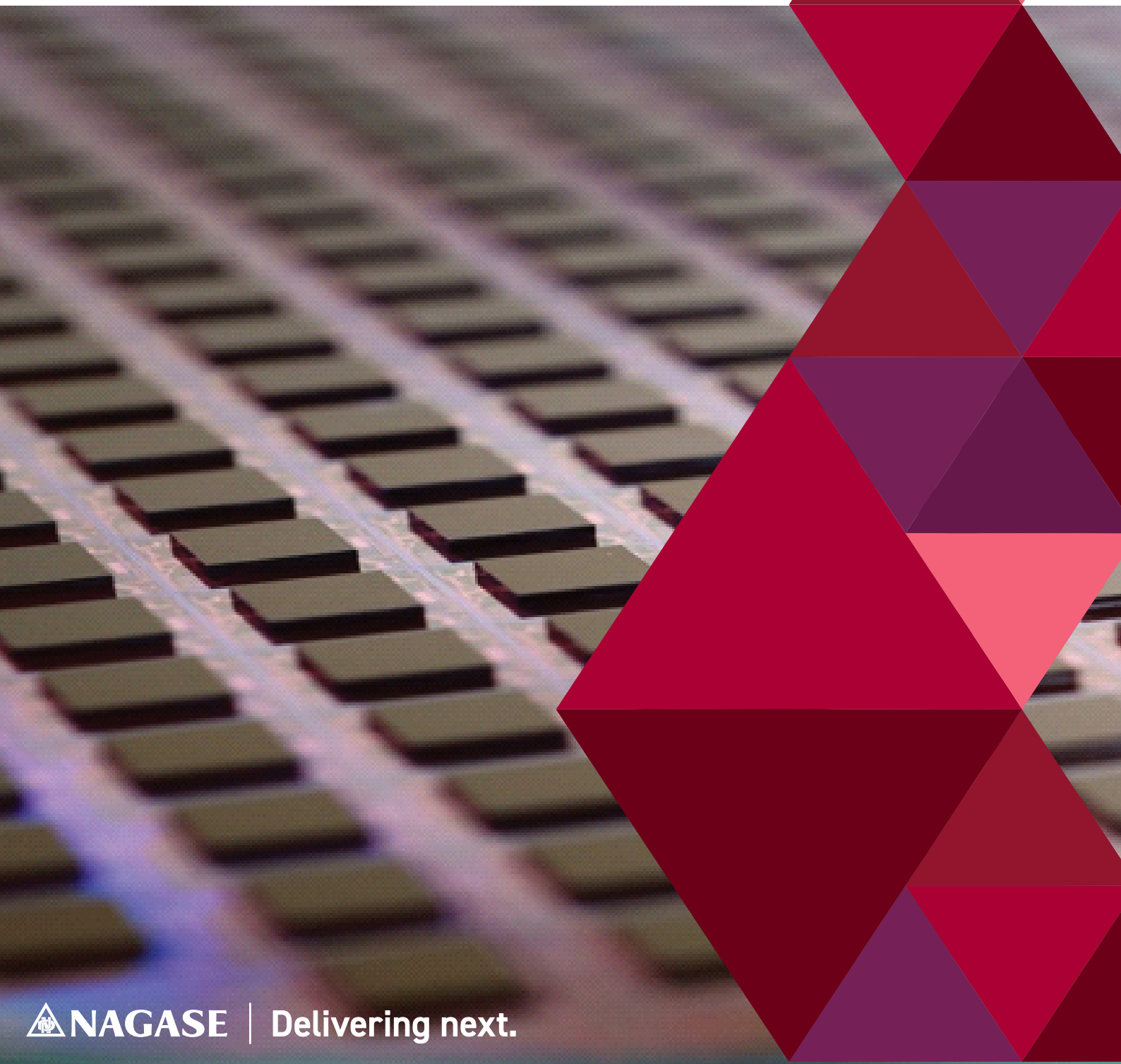
Materials for Power Devices and Electronic

Advanced Material for Semiconductor Doping



NAGASE | Delivering next.

Product Details - In Mass Production

	PV	6” Wafer	8” Wafer	12” Wafer
Doping / Oxidation (Diffusion)	$POCl_3$ BBr_3 P_4 DCE	$POCl_3$ BBr_3 P_4 DCE $AlCl_3$	$POCl_3$ P_4 DCE	P_4 DCE
Precursors (CVD / ALD)	TMA	TEOS BPSG HMDS	TEOS BPSG HMDS	TEOS BPSG HCDS $TiCl_4$ TMA

TEOS

Synonym	Tetraethyl Orthosilicate, Ethyl Silicate
Properties	Colorless liquid Density: 0.9346 g/cm^3 Stable when exposed to air
Applications	Reacts with O_2 / O_3 / N_2O to form SiO_2 layer during fabrication processes of IC, discrete device, MEMS, OLED, TFT-LCD, etc.
Fill Volume	2 gallons, 5 gallons (19 L), 10 gallons, 1.5 L, 3.0 L, 200 L

DCE

Synonym	Trans 1,2-Dichloroethylene, Trans-LC
Properties	Colorless liquid Density: 1.25 g/cm^3 Flammable
Applications	Silicon oxidation during wafer fabrication. Furnace tube cleaning in doping processes of solar cell and IC products.
Fill Volume	500 mL, 1000 mL, 1500 mL, 19 L

BPSG

Synonym	TMB / TMP / TMPO / TEB / TEPO
Properties	Colorless liquids with pungent odor
Applications	Mixed with TEOS to form PSG and BPSG layers through CVD process in wafer fabrication.
Fill Volume	5 gallons (19 L)

$POCl_3$

Synonym	Phosphorus Oxychloride
Properties	Colorless liquid Density: 1.675 g/mL Strongly corrosive. Hydrolyzed into water and phosphoric acid.
Applications	Dopants used in diffusion processes of wafer and discrete device as well as P-type solar cell.
Fill Volume	500 mL, 1000 mL, 1500 mL, 4.5 L, 5 L, and/or customized

BBr_3

Synonym	Boron Tribromide
Properties	Colorless and furning liquid Density: 2.64 g/mL Strongly corrosive. Decomposed when exposed to water or light.
Applications	Dopants used in diffusion processes of wafer and discrete device as well as N-type solar cell.
Fill Volume	500 mL, 1000 mL, 1500 mL, and/or customized

TMA

Synonym	Trimethyaluminum
Properties	Colorless liquid. Density: 0.752 g/mL Melting Point: 127.12 °C Self-ignition when exposed to air. Pyrophoric inflammable gas released when contacts with water. Contact with substance may cause severe burns and injuries to skin and eyes..
Applications	Used to form passivation Al_2O_3 layer of solar cell. Applied in OLED packaging. Used as high-K materials for IC products (DRAM capacitor dielectric, gate dielectric and flash blocking oxide).
Fill Volume	14.2 kg, 72 kg, 300 kg

Red Phosphorus (P_4)

Synonym	Red Phosphorus
Properties	Bronzing amorphous powder or bulk solid Relative Density: 2.20 g/mL Melting Point: 590 °C Ignition Point: over 200 °C Explodes when contacts with oxidants
Applications	One of the raw materials to synthesize the phosphorus-based compound semiconductor like InP. It is a solid phosphorus source used in heavily-doping wafer process and diffusion doping of IC and PV industries.
Fill Volume	100 g, 500 g

Find out more

NAGASE (EUROPA) GmbH
Werdener Strasse 4
40227 Duesseldorf
Germany

Tel: +49 (0)211 86620 0
islemecioglu@nagase.eu