See Beyond the Horizon

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Uncertainty around true materials requirements is a huge risk for leading edge materials developers.

Major Industries Covered

- Semiconductor
- ♦ LED
- FPD
- PV

Linx Consulting Industry Analysis Service

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Linx Consulting Inc.

GAS SERVICE, 2018

Linx Consulting's Electronic Specialty Gas Service covers the large variety of specialty gases used in the global electronics industry. The service is designed for marketers, product managers and executive management and provides guidance on the market growth of each segment (5 year CAGR % on a volume and value basis), regional demand for each product and an independent view of the market dynamics including an analysis on global supplier share by product. This service will allow participants to understand their position in the global electronic specialty gases market, measure progress, and better plan their strategy and tactical initiatives.

The Electronic Specialty Gas Market was over \$2.74 billion in 2016. Recently there have been many changes in the ESG supply chain with several companies exiting the market and others choosing not to add additional capacity. In addition, the demand side has also changed with new LCD fabs coming on line in China and the move of 3D NAND to high volume manufacturing.

This annual service provides a market forecast of electronic specialty gases used in the global semiconductor, LED, Flat Panel Display, and Photovoltaics industries. The Forecast section of the report includes a five year forecast broken out by products on both a volume and value basis. Key categories of products reviewed include:

- Etchants Chamber Cleans
- Dopants & Blends
- Deposition Gases & Sources
- Si Precursors
- Corrosives
- Litho Gases

Market Size Estimates

The forecasts will be published once each year. All reports will be sent out as editable Excel and PowerPoint format files to a Designated Contact at each client company. Key segments reported include the following:

Regions

- ◆ China
- Europe
- Japan
- Korea
- SE Asia
- USA

Applications

- Semiconductor
- Compound Semi
- LCD
- Solar

Companies participating in the service will be requested to give input on their views of market developments for each publication of the forecast.

<u>Methodology</u>

The forecasts are based on direct interviews in Asia, Europe and the USA as well as the Linx Materials Forecast Model for IC materials demand internal process database and emerging technology analysis to develop unique segment forecasts.

Forecasts will be delivered in volumes and revenues (US\$).

Pricing

The service is priced on an annual basis. The cost of the service is detailed as follows for each category:

Category	Pricing (USD)	
Regular Subscriber — Electronic Specialty Gases	\$12,100	
• 1 Gas	\$4,200	
• 2 Gases	\$6,300	

ELECTRONIC SPECIALTY GAS SERVICE, 2018

ELECTRONIC SPECIALTY GAS PRODUCTS COVERED

HFC	Dopants & Blends	Other Gases (continued)
R-32 (difluoromethane) CH_2F_2	AsH ₃ *	Cl_2
R-23 (trifluormethane) CHF ₃	PH ₃ *	CIF ₃
C ₃ F ₈ (perfluoropropane)	¹¹ BF ₃ -	CO
C ₄ F ₆ (hexafluorobutadiene)	B ₂ H ₆ (blends)	COS
C_5F_8 (perfluorocyclopent-1-	⁷² GeF ₄	GeH ₄
ene)	TEB	H ₂ Deuterium
R-41 (fluoromethane) CH₃F	TEPO	H ₂ S
C ₂ F ₆ (hexafluoroethane)	ТМВ	H ₂ Se
CF ₄ (tetrafluoromethane)	POCL ₃	HBr
C ₄ F ₈ (octafluorocyclobutane)	BBr ₃	HCl
		HF
Silicon Products	Litho Laser Gases	N_2O
Silane *	KrF Active/Inert	NF ₃ *
Disilane	ArF Active /Inert	NH ₃ *
TEOS		NO
DCS - SiH ₂ Cl ₂	Other Gases	SF ₆
Trichlorosilane	BCI ₃	SiF ₄
Silicon Tetrachloride	C_2H_2	SO ₂
HCDS	C ₂ H ₄	TiCl ₄
Monochlorosilane	C ₃ H ₆	WF ₆
SiF ₄	CH ₄	Xe

*Multiapplication Gases	Silicon Semi	Compound Semi	LCD	PV
Silicon Products—Silane	X	_	Χ	X
Dopants & Blends— AsH ₃	Χ	X	_	Χ
Dopants & Blends—PH ₃	Χ	Χ	Χ	_
Other Gases—NF ₃	Χ	_	Χ	Χ
Other Gases—NH ₃	Χ	X	Χ	Χ

ELECTRONIC SPECIALTY GAS SERVICE, 2018

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Signature	Please Cirlcle: Full report 1 Gas 2 Gas

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