

FLUORINE CHEMISTRY. ENABLING SEMICONDUCTOR INNOVATION.



DEPOSITION & PATTERNING

Tungsten Hexafluoride (WF₆):

Tungsten Deposition Precursor



CAS No.:
7783-82-6



Purity/Grade:
≥99.9999% (6N)



Key Features:
Volatile tungsten precursor, highly reactive with moisture, corrosive and toxic, requires specialised handling



Semiconductor Applications:
CVD/ALD tungsten deposition, contact and via fill, tungsten metallisation and interconnect structures



Environmental/Sustainability Advantage:
Enables precise, conformal tungsten deposition, controlled handling and abatement are essential

Hexafluoro-1,3-butadiene (C₄F₆):

Advanced Dielectric Etch Gas



CAS No.:
685-63-2



Purity/Grade:
≥99.99% (4N)



Key Features:
High-purity fluorocarbon, colourless and odourless, supplied as liquefied compressed gas, highly reactive under plasma conditions



Semiconductor Applications:
Advanced dielectric etching, high-aspect-ratio contact/via etch, self-aligned contact and dual-damascene applications



Environmental/Sustainability Advantage:
Lower-GWP fluorocarbon chemistry compared with conventional high-GWP PFC chemistries

CHAMBER CLEANING & SUSTAINABILITY

Enabling cleaner, lower-GWP semiconductor manufacturing

Nitrogen Trifluoride (NF₃):

Chamber Cleaning Gas



CAS No.:
7783-54-2



Purity/Grade:
≥99.999% (5N)



Key Features:
Volatile tungsten precursor, highly reactive with moisture, corrosive and toxic, requires specialised handling



Semiconductor Applications:
Strong fluorine source, stable under storage, highly effective plasma-cleaning chemistry, requires controlled handling



Environmental/Sustainability Advantage:
Remote-plasma chamber cleaning for CVD/PECVD, removal of deposited silicon-based and other process residues

Fluorine/Nitrogen Mix (F₂/N₂):

Next-Generation Chamber Cleaning Gas



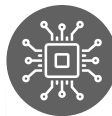
CAS No.:
F2: 7782-41-4; N2: 7727-37-9



Purity/Grade:
Electronic Grade



Key Features:
Controlled fluorine delivery in nitrogen, highly reactive oxidising chemistry, engineered for semiconductor chamber cleaning



Semiconductor Applications:
CVD/PECVD chamber cleaning, removal of deposited silicon-based residues, semiconductor, photovoltaic and display manufacturing



Environmental/Sustainability Advantage:
Zero-GWP fluorine-based cleaning chemistry, potential to reduce fluorinated-GHG emissions and cleaning energy



SURFACE & EQUIPMENT ENABLEMENT

Ultra-high-purity materials for process control and equipment reliability

Anhydrous Hydrogen Fluoride (AHF):

Ultra-High-Purity Etching & Cleaning Chemical



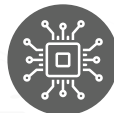
CAS No.:
7664-39-3



Purity/Grade:
≥99.999% (5N)



Key Features:
Ultra-high-purity hydrogen fluoride, highly reactive, volatile and strongly corrosive, stringent handling required



Semiconductor Applications:
Native oxide removal, wafer surface preparation, selective cleaning/etching of silicon-based materials



Environmental/Sustainability Advantage:
High-purity chemistry supports controlled wafer-surface treatment and reduced process contamination

Perfluoropolyether (PFPE):

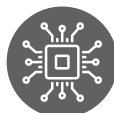
Speciality Fluorinated Fluid



Purity/Grade:
High-Purity Grades



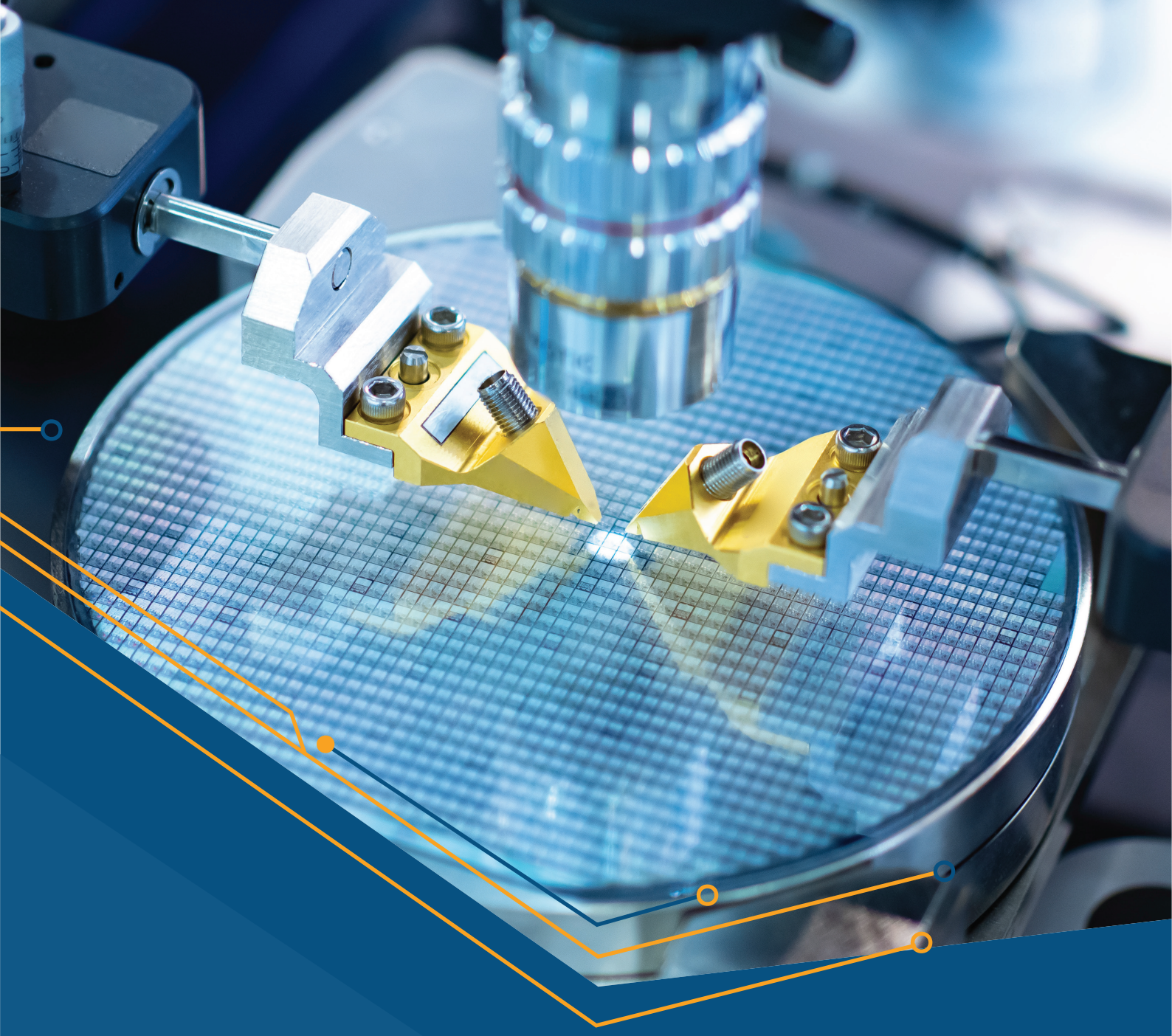
Key Features:
Chemically inert, excellent thermal stability, low vapour pressure, low outgassing, excellent lubricity



Semiconductor Applications:
High-vacuum lubrication of wafer-handling robots, bearings, linear guides and semiconductor process equipment



Environmental/Sustainability Advantage:
Long service life and low outgassing help reduce maintenance, component replacement and contamination



HEADQUARTERS

INOXGFL Towers, Plot No. 17, Sector 16A Noida-201301, U.P., India
t: +91-120-6149600 | www.gfl.co.in  @gujaratfluorochemicalslimited