

NobleGen – Applications Guide

| Products for Gas Chromatography | | | |
|---------------------------------|------------------------------------|-------------------|--------------------|
| Instrument | Gas Requirement | Purity | Generator Required |
| GC-FID | Hydrogen for fuel gas | UHP | Hydrogen |
| | Zero Air for flame gas | Hydrocarbon-free | Zero Air |
| | Hydrogen for capillary carrier gas | UHP | Hydrogen |
| | Nitrogen for packed carrier gas | UHP, Zero grade | Zero Nitrogen |
| | Nitrogen for make-up gas | UHP, Zero grade | Zero Nitrogen |
| GC-FPD | Hydrogen for fuel gas | UHP | Hydrogen |
| | Zero Air for flame gas | Hydrocarbon free | Zero Air |
| GC-NPD | Hydrogen for capillary gas | UHP | Hydrogen |
| | Nitrogen for make up gas | UHP, Zero grade | Zero Nitrogen |
| GC-ECD | Nitrogen for carrier gas | UHP, Zero grade | Zero Nitrogen |
| | Nitrogen for make up gas | UHP, Zero grade | Zero Nitrogen |
| GC-TCD | Hydrogen as carrier gas | UHP | Hydrogen |
| GC-ATD | Dry air purge | Clean and dry air | Clean Dry Air |
| GC-AED | Nitrogen for carrier gas | UHP, Zero grade | Zero Nitrogen |
| GC-ELCD, HALL | Hydrogen as reaction gas | UHP | Hydrogen |

| Products for LCMS Instruments | | | |
|---|---|---|------------------------------------|
| Instrument | Gas Requirement | Purity | Generator Required |
| LCMS API/LCMS APCI, ELECTROSPRAY, LCMS/MS,TOF | Air for nebulizer gas Nitrogen for curtain and sheath shield gas | Clean and dry air, hydrocarbon free 99.5% | Clean Dry Air or Zero Air Nitrogen |

| Products for Spectroscopy | | | |
|---------------------------|--|---------------------|---------------------------|
| Instrument | Gas Requirement | Purity | Generator Required |
| FT-IR Spectrometer | Purge gas for sample compartment, optics, air bearing and microscope | Clean dry, CO2 free | CO2 free air |
| NMR Spectrometer | Air for lifting spinning and ejecting | Clean and dry air | Clean Dry Air |
| ICP Spectrometer | Nitrogen or zero nitrogen for purge gas | 99.99+% | Nitrogen or Zero Nitrogen |
| AA Spectrometer | Air for oxidant gas | Clean and dry air | Clean Dry Air |

| Products for Analyzers | | | |
|------------------------|------------------------------------|--------------------------------------|---------------------------|
| Instrument | Gas Requirement | Purity | Generator Required |
| TOC | Hydrogen for fuel gas | UHP | Hydrogen |
| | Zero Air for flame gas | Hydrocarbon-free | Zero Air |
| | Hydrogen for capillary carrier gas | UHP | Hydrogen |
| | Nitrogen for packed carrier gas | UHP, Zero grade | Zero Nitrogen |
| | Nitrogen for make-up gas | UHP, Zero grade | Zero Nitrogen |
| THA | Zero air for FID | Hydrocarbon free | Zero Air |
| | Hydrogen for fuel gas | UHP | Hydrogen |
| DSC | Air for air shield | Clean and dry | Clean Dry Air |
| TGA | Nitrogen or dry air as furnace gas | Clean and dry air or high purity N2 | Clean Dry Air or Nitrogen |
| TOD | Nitrogen for carrier gas | UHP, Zero grade | Zero Nitrogen |
| CO2 analyzer | Calibration air | Clean dry, CO2 free hydrocarbon free | CO2 free air |

| Products for other laboratory applications | | | |
|--|--------------------------------------|-------------------|--------------------|
| Instrument | Gas Requirement | Purity | Generator Required |
| Sample Prep Autosamplers | Nitrogen for solvent evaporation | 95% to 99% | Nitrogen |
| | Air for pneumatic controls | Clean and dry | Clean Dry Air |
| | Nitrogen for sample injector | UHP, Zero grade | Zero Nitrogen |
| Circular Dichroism | Nitrogen | UHP, Zero grade | Zero Nitrogen |
| ELSD Detector | Nitrogen | 98% | Nitrogen |
| Particle sizing by laser diffraction | Clean and dry air for nebulizing gas | Clean and dry air | Clean Dry Air |