

# Gas Generator Application Guide

Instrument	Gas Requirement	Purity	Flow Rate	Generator Recommendation
Products for Gas Chromatography				
GC-FID	Hydrogen for fuel gas	UHP	30-50 cc/min	Hydrogen
	Zero air for flame gas	Hydrocarbon-free	300-500 cc/min	Zero Air
	Hydrogen for capillary carrier gas	UHP	up to 10 cc/min	Hydrogen
	Nitrogen for packed carrier gas	UHP, zero grade	20-50 cc/min	Zero Nitrogen
	Nitrogen for make-up gas	UHP, zero grade	30-50 cc/min	Zero Nitrogen
GC-FPD	Hydrogen for fuel gas	UHP	60-90 cc/min	Hydrogen
	Zero Air for flame gas	Hydrocarbon free	90-120 cc/min	Zero Air
GC-NPD	Hydrogen for capillary gas	UHP	up to 50 cc/min	Hydrogen
	Nitrogen for make up gas	UHP, zero grade	up to 30 cc/min	Zero Nitrogen
GC-ECD	Nitrogen for carrier gas	UHP, zero grade	up to 60 cc/min	Zero Nitrogen
	Nitrogen for make up gas	UHP, zero grade	up to 100 cc/min	Zero Nitrogen
GC-TCD	Hydrogen as carrier gas	UHP	up to 50 cc/min	Hydrogen
GC-ATD	Dry air purge	Clean and dry air	less than 2L/min	Clean Dry Air
GC-AED	Nitrogen for carrier gas	UHP, zero grade	less than 1L/min	Zero Nitrogen
GC-ELCD,HALL	Hydrogen as reaction gas	UHP	70 to 200 cc/min	Hydrogen
Products for LCMS Instruments				
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%	18L/min 5 to 35L/min	Clean Dry Air or Zero Air Nitrogen
Products for Spectroscopy				
FT-IR Spectrometer	Purge gas for sample compartment, optics, air bearing and microscope	Clean dry, CO <sub>2</sub> free	14 to 85L/min	CO <sub>2</sub> free air
NMR Spectrometer	Air for lifting spinning and ejecting	Clean and dry air	up to 300L/min	Clean Dry Air
ICP Spectrometer	Nitrogen or zero nitrogen for purge gas	99.99 + %	up to 9L/min	Nitrogen or Zero Nitrogen
AA Spectrometer	Air for oxidant gas	Clean and dry air	28 to 200L/min	Clean Dry Air
Products for Analyzers				
TOC	Dry air or Nitrogen for carrier gas or combustion gas	Clean dry, CO <sub>2</sub> free/ hydrocarbon free	100-500 cc/min	CO <sub>2</sub> free air/ Zero Air
		UHP	50-700 cc/min	Zero Nitrogen
THA	Zero air for FID	Hydrocarbon free	50 to 500 cc/min	Zero Air
	Hydrogen for fuel gas	UHP	5 to 50 cc/min	Hydrogen
DSC	Air for air shield	Clean and dry	100cc/min	Clean Dry Air
TGA	Nitrogen or dry air as furnace gas	Clean and dry air or high purity N <sub>2</sub>	100cc/min	Clean Dry Air or Nitrogen
TOD	Nitrogen carrier gas	UHP, Zero grade	300cc/min	Zero Nitrogen
CO <sub>2</sub> analyzer	Calibration air	Clean dry, CO <sub>2</sub> free hydrocarbon free	550 to 1000cc/min	CO <sub>2</sub> free air
Other laboratory applications				
Sample Prep Autosamplers	Nitrogen for solvent evaporation	95% to 99%	up to 130L/min	Nitrogen
	Air for pneumatic controls	Clean and dry	28L/min	Clean Dry Air
	Nitrogen for sample injector	UHP, zero grade	550cc/min	Zero Nitrogen
Circular Dichroism	Nitrogen	UHP, zero grade		Zero Nitrogen
ELSD Detector	Nitrogen	98%	2-8 L/min	Nitrogen or
Particle sizing by Laser Diffraction	Clean and dry air for nebulizing gas	Clean and dry air		Clean Dry Air