

# LABORATORY INSTRUMENTS | OAKDALE, MN

## Chromatography

	<b>Manufacturer/Model</b>
HPLCs: including UV/VIS, RI, PDA and electro-chemical detection (28)	Agilent 1100, Agilent 1200 Waters Alliance
UPLC and UPLC/MS/MS (5)	Waters, Waters TQD, Waters MS-TOF
Ion Chromatographs (IC) (3)	Dionex DX-500 System
GCs: including FID, ECD and TCD detection (12)	Agilent 6890
GC/MS (4)	Agilent 6890/5973, Agilent 6890/5975
Headspace Analyzers (4)	Gerstel MPS 2 Twister, Perkin Elmer HS 40XL, Agilent 7964
Turbo Matrix for GC/MS	Perkin Elmer TurboMatrix ATD

## Dissolution / Elution Equipment

	<b>Manufacturer/Model</b>
Dissolution baths Apparatus I, II and V (51)	Hanson Research SR8, Distek 2100B, VanKel VK7000, Distek Premiere 5100, Distek 2100A
Dissolution baths Apparatus III	Agilent
Dissolution baths Apparatus VII (2)	Agilent
Incubator Shaker (4)	Thermo Scientific SHKE4000, New Brunswick Scientific Excella E24R

## Elemental Metals Equipment

	<b>Manufacturer/Model</b>
Inductively Coupled Plasma (ICP)	Thermo Fisher iCAP 6500
ICP/MS	Thermo Fisher X-Series 2
Atomic Absorption Spectrometer-Flame and Graphite Furnace	Perkin Elmer AAnalyst 800
Mercury Analyzer	Perkin Elmer FIMS 1000
Microwave	CEM

## Spectroscopy

	<b>Manufacturer/Model</b>
FTIR Spectrometer-gas phase (1)	MIDAC Corp. (Custom)
FTIR Spectrometer-solid phase (2)	Perkin Elmer
UV/VIS Spectrophotometer	Beckman Coulter DU-800, Agilent 8453
EDXRF Spectrometer	Rigaku NEX CG EDXRF Analyzer

## Laboratory Equipment

	<b>Manufacturer/Model</b>
Auto Titrator - Karl Fischer Coulometric	Mettler Toledo C30
Auto Titrator - Karl Fischer Potentiometric	Brinkmann / Metrohm (751 GPD Titrimo), Titrande
Auto Titrator - Karl Fischer Volumetric	Mettler Toledo V20
Karl Fischer Titrator (2)	Accumet Model 100
Total Organic Carbon Analyzer (2)	Tekmar-Dohrmann Phoenix 8000, Tekmar-Dohrmann Fusion
Polarimeter	Rudolph Research Model Autopol IV
Rotational Viscometer (2)	Brookfield LVDV II+, Brookfield RVDV II+P

## Laboratory Equipment (Cont'd)

	<b>Manufacturer/Model</b>
Inherent Viscosity Meter	Rheotek RPV-1
Disintegration Apparatus	Agilent VK-100
Kjeldahl Nitrogen Analyzer	Foss Kjeltex 8100
Moisture Balance	Arizona Instruments Computrac 4000XL
Osmometer	Wescor Vapro 5520
Potent Compound Hood	Flow Sciences FS10301
RoTap Sieve Shaker	Tyler RX30
Accelerated Solvent Extractor	Dionex ASE 200
Freezer Mill	Spex 6850
Turbidimeter	HF Scientific MICRO 1000IR
Vacuum Oven	Yamato ADP 21
RotoVap/Waterbath	Buchi (R114)(B480)
Soxtherm Automated Extraction Apparatus (2)	O I Analytical Soxtherm
Tapped Density	Varian 50-1000

## Microbiology Testing Equipment

	<b>Manufacturer/Model</b>
Liquid Particle Counting System	HIAC Model 9703
Kinetic Bacterial Endotoxin Testing System	Charles River Endosaf EndoScan V software package
Millipore SteriTest-Closed Sterility Test System	Catalog #TQNXLFF01, Serial Number 383
Water Activity Meter	Decagon Devices AquaLab4
Active Air Sampler for Viable Microbial Particles (12)	Biotest, EMD
Laser Particle Counter, Active Air Sample for Total Airborne Particulate (10)	Met One, Biotest, Pacific Scientific
Image Analyzer/Microscope (2)	Fryer Image Analyzer / Nikon Eclipse E400, Nikon Eclipse E600
Light Microscope with Florescent source	Olympus BX50F4
Microbial Incubators (16)	Various
Stereoscope	Nikon SMZ-2T, Model H-III (camera)

## Physical Testing Equipment

	<b>Manufacturer/Model</b>
Andersen Cascade Impactors (13)	Andersen Instruments Inc. Model 10-709
DSC / TGA	TA Instruments
Instron	Instron 4201, Instron 5565
Tablet Hardness Tester	Dr Schleuniger Pharmatron 8M
I-Mass	Instrumentors, Inc. SP-2000
Probe Tack Tester	TMI (Testing Machines, Inc) Lab Master
Seal Strength Tester	Carleton Technologies Test-A-Pack Model F100-2600
Durometer	Shore Type D
Heat Sealer	Sencorp 12AS/2
Penetrometer	Koehler Instrument Company
Static Decay Meter	ETS (Electro-Tech Systems, Inc) 406D



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Our Minnesota lab is cGMP-compliant, FDA Registered, DEA Registered and ISO/IEC 17025:2005 accredited.

# LABORATORY INSTRUMENTS | SAN GERMAN, PR

## Chromatography

	<b>Manufacturer/Model</b>
Gas Chromatograph (9) (FID, TCD, FID/TCD)	Agilent 6890
HPLC (UV/VIS, PDA, RI, Fluorescence Detector) (9)	Waters Alliance 2695, Agilent 1200
Gas Chromatograph (TCD)	Agilent 6850
Headspace Samplers (2)	Agilent G1888, Tekmar HT3

## Elemental Metals Equipment

	<b>Manufacturer/Model</b>
Atomic Absorption Spectrophotometer HGAA/FAA (2)	Perkin Elmer 700
Atomic Absorption Spectrophotometer Cold Vapor Technique (Mercury Analysis)	Perkin Elmer FIMS 100

## Spectroscopy

	<b>Manufacturer/Model</b>
InfraRed (FTIR/ATR) (2)	Perkin Elmer Spectrum 100
Spectrophotometer UV/VIS (3)	Agilent 8453
Colorimeter (2)	HACH DR-850

## Facility Monitoring

	<b>Manufacturer/Model</b>
Surface Air Samplers (SAS) (7)	PBI 180, PBI 360
RCS High Flow Microbial Monitor	Biotest 940215
Particle Counter, Laser Type (7)	Biotest APC Plu, Climet CI-450t
Hydrocarbon Analyzers (2)	USI's 6200P
Oxygen, CO <sub>2</sub> , CO Portable Meter	RKI Instruments Eagle
Hygrometers	VWR Scientific
Dew Point Meter/Moisture Analyzers (2)	General Electric MMY-245
Chronometers/Timers (32)	Fisher, Control Co., Radio Shack
Data loggers (22)	Sensitech TT-4
Flow Meters, General Use (14)	Cole Parmer, VWR, Dwyer
Flow Meters, Digital (3)	Agilent, Shimadzu
Pressure Gauges (9)	Cole Parmer, Noshok, WICA
Velometer	Alnor RY05
Thermocouple Validator	Kaye 2000

## Laboratory Equipment

	<b>Manufacturer/Model</b>
Titrators (4)	Mettler Toledo DL55, DL38, T50, V30
Titrators, Coulometric	Mettler C30X
Total Organic Carbon Analyzer (2)	Tekmar Dohrmann Phoenix 8000, Fusion
Polarimeter	Rudolph Autopol IV
Polarimeter Quart Calibration Cell (2)	Rudolph
Osmometer	Wescor Co.
Viscometers, Cannon Fenske (4)	Ace Glass, Cannon
Viscometers, Rotational (2)	Brookfield LVDV-II + P and RVDV-II + P
Viscometers, Ubbelode (7)	Cannon
Viscosimeter, Zahn	BYK Gardner
Fluorometer	Turner Instr. 450/94000-01
Melting Point Apparatus, 0 to 400 °C	Electrothermal 9100
Refractometer, Digital	Rudolph J257
Particle Size, Rotap Sieve Shaker	WS Tyler RX29
Particle Size, Vibrational Shaker	Retsch AS 200
Particle Size, Air Jet	Hosokawa
Conductivity Meters (3)	Oakton 510, Mettler Toledo
pH Meters (4)	Corning 430, Mettler Toledo
Turbidimeters (2)	HF Scientific, Thermo Scientific
Muffle Furnace (2)	Thermoline
Balances, Top Loading (4)	Denver, Mettler
Balances, Analytical(6)	Mettler
Centrifuge (3)	Thermo Electron, Eppendorf
Density Tester, Scott Volumeter	GardCo.
Tapped Density	Pharmatron
Texture Analyzer	Brookfield CT3 1000
Nitrogen Analyzer	Büchi K-355
Weight Per Gallon Cup (2)	BYK Gardner

## Microbiology Testing Equipment

	<b>Manufacturer/Model</b>
Microbial Identification	Bruker Maldi Biotyper Charles River Access™ System
Bacterial Endotoxin Kinetic / Turbidimetric System	Bio-Tek
Vitek Identification System	BioMerieux Vitek 2 Compact
Vitek Colorimeter	Vitek Special DR100
Vitek Densi-Chek Plus	BioMerieux
Incubators (9)	Fisher Scientific, Precision, VWR, Thermo Electron, LabLine, Lunaire
Autoclaves (2)	Consolidated Corp. SSR3APB, AMSCO Eagle 3000
Microscope (3)	Fisher, Nova
Stereoscope	Nova
Laminar Flow Hoods (4)	Nuaire, Baker
Colony Counter	Darfield Quebec 3327



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