

1988
YEAR BOOK

VOLUME 52 NO 5



chemistry
in new zealand

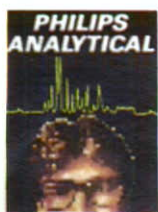
Philips Analytical



Philips
PV 8060 series
Optical emission
spectrometers



PHILIPS



BIGGER IDEAS FOR BETTER ANALYSIS

CHEMISTRY IN NEW ZEALAND YEARBOOK 1988

Volume 52 No.5

CONTENTS

Editor: Bruce Graham, c/- Dept of Health, 2 Edenvale Rd, Mt Eden, Auckland.

Branch Editors:

Auckland: Dr Roger Whiting, Auckland Technical Institute, Private Bag, Auckland.

Waikato: Nick Robinson, c/-Chemistry Dept, University of Waikato, Private Bag, Hamilton.

Manawatu: Dr Cecil Johnson, Applied Biochemistry Division, Private Bag, Palmerston North.

Wellington: Dr Lawrence Porter, Chemistry Division, DSIR, Private Bag, Petone.

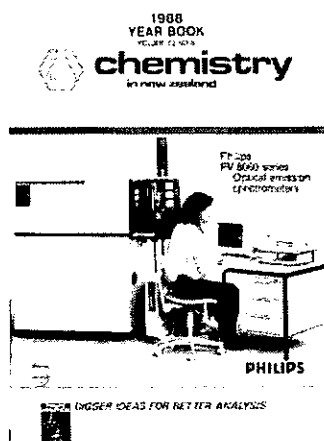
Canterbury: Dr Selwyn Maister, Christchurch, Polytechnic, P.O. Box 22-095, Christchurch.

Otago: Dr Jim McQuillan, Chemistry Department, University of Otago, P.O. Box 56, Dunedin.

Published on behalf of the New Zealand Institute of Chemistry (Inc), P.O. Box 29183, Christchurch. President: D.R. Llewellyn, Hon. Gen. Secretary: Dr John Rogers, Registrar: D.P. Karl.

Cover Story — The Philips PV8060 ICP Spectrometer	3
Company Listing This main listing has addresses and phone numbers plus a brief description of each company. Companies are listed in alphabetical order. Each company is given a reference number by which it is referred to in subsequent listings. The letter code indicates the sections in which products or services offered by the company can be found	5
Section A, Laboratory Instruments Balances, pH meters, gas chromatographs etc. listed under brand names	29
Section B, Laboratory Equipment Bench surfaces, spatulas, hot plates etc. listed by brand name	31
NZ Association of Consulting Laboratories	33
Section C, Consultants Areas of expertise and equipment available	34
Section D, Chemicals Listed under several broad categories, and also an alphabetical list of chemical brand names	37
Section E, Process Control Equipment	40
Section F, Process Equipment	41
Overseas Principals An alphabetical listing of overseas chemistry-related companies represented in New Zealand	42

FRONT COVER



ICP Emission Spectrometers offer advanced performance and automation features.

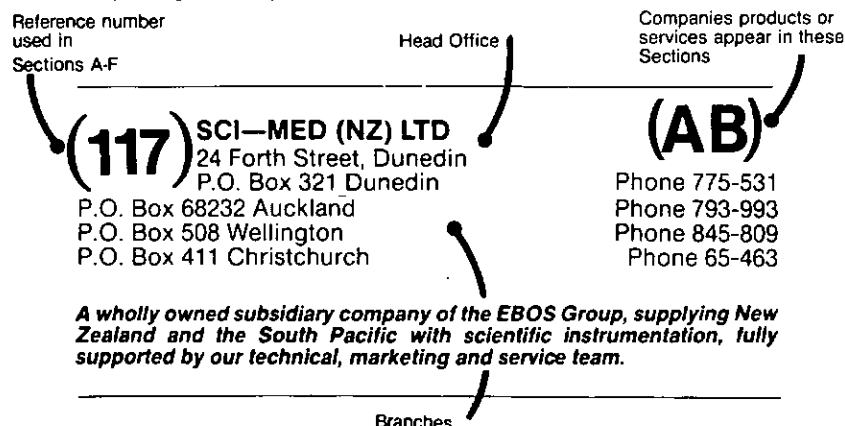
The PV8060 Series ICP optical emission spectrometers from Philips Analytical: flexible elemental analysis in simultaneous, sequential and combined modes.

For further details see page 3.

Published by: CATHEDRAL PRESS (PACIFIC) LTD, P.O. Box 9072, Newmarket. Phone 775-533. Advertising Manager, Carl Roze, Phone Auckland 547-244.

HOW TO USE THE DIRECTORY:

If you know the product you are interested in e.g. a pH meter turn to the appropriate section (in this case Section A, Laboratory Equipment). Brand names of pH meters are listed and referenced back to the Company Listing see example below.



A wholly owned subsidiary company of the EBOS Group, supplying New Zealand and the South Pacific with scientific instrumentation, fully supported by our technical, marketing and service team.

ALPHATECH

SYSTEMS LTD & CO.

LEADERSHIP IN . . .

CHROMATOGRAPHY

Waters for all HPLC
Carlo Erba for innovative GC
Atto for open column chromatography.

CENTRIFUGATION

A complete range of sizes and speeds from the Beckman Microfuge to the new TL-100 benchtop Ultracentrifuge.

SPECTROSCOPY

Hitachi Scientific Instruments present excellent quality and performance in UV-Vis, IR, AA, FLUORO, NMR, TEM, SEM.

pH/CONDUCTIVITY/ TEMPERATURE

Hanna Instruments provide a wide range of economical meters, including pocket, portable and bench units

RADIOCHEMISTRY

Widest choice of detectors and electronics plus plug-in Spectrometers for micro-computers.

ELEMENTAL ANALYSIS

Carlo Erba are leading manufacturers of Nitrogen Analysers as well as C, H, N, O, S units.
Europa Scientific provide Isotope Ratio Mass Specs

ELECTROPHORESIS

Atto is a leading Japanese supplier of Electrophoresis equipment

MOLECULAR BIOLOGY

Applied Biosystems have developed Protein/Peptide Synthesisers and Sequencers and DNA Synthesisers, Sequencers and Extractors.

The Phillips PV8060 ICP Spectrometer

Introduction

A simultaneous spectrometer offers great advantages over a sequential spectrometer, especially with respect to speed of analysis and optical stability, but lacks flexibility. A programmable scanning channel retains the advantages of a simultaneous system while at the same time giving the freedom of line choice associated with a sequential system. This is a unique feature of the Phillips PV8060 ICP Spectrometer, thus giving the advantages of both a polychromator and a monochromator.

Spectrometer System Design

The spectral region 165-484 nm is covered by a Paschen-Runge mounted holographic grating (21601/mm) with a focal length of one metre. The holographic grating keeps the stray light to the lowest possible level giving reduced spectral backgrounds, which leads to lower detection limits and less interference. All spectral lines in this wavelength region can be measured at a reciprocal dispersion of 0.46 nm per mm in the first order, thus avoiding the light losses associated with measurements in high orders and order separation filters. Long wavelength lines for elements such as alkali metals are measured with a separate Monk Gillieson polychromator which uses the zero order reflection from the main grating to illuminate a separate (12001/mm) plane grating. In this manner all spectral lines can be measured using a dispersion appropriate to the requirements for optimal luminosity and separation. The long wavelength extension covers the range of 535 to 852 nm (including, for example, Ti 535 nm and Cs 852 nm). The spectrometer is capable of measuring up to 56 spectral lines.

Exit Slits

The required series of exit slits are positioned on a slit plate using a specially developed machine. The slits are positioned with an accuracy of better than 1 micron, corresponding to a wavelength accuracy of better than 0.00046 nm. This highly accurate slit manufacturing machine uses computer-assisted location techniques developed in conjunction with Philips Research Laboratories.

Removal of post exit slit cross-stalk between adjacent channels is achieved by means of light guides. These internally reflective guides isolate each measuring channel, ensuring effective light transfer with reduced background and inter-element effects. This construction enables the inter-slit distances to be minimised and facilitates the selection of the spectral lines most suited to the solution of a customer's analytical needs.

Scanning Channel

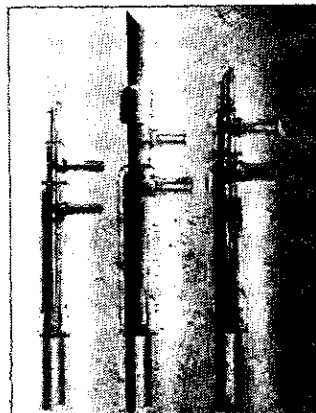
The system can be equipped with a programmable scanning channel which can scan any part of the instrument's main wavelength range or can be set to selected positions to measure

those lines for which fixed exit slits have not been fitted. The detector employs a positioning method first developed by Philips for the numerical control of machine tools and can be positioned within the spectrometer with an accuracy of better than 0.0005 nm. This accuracy is achieved by means of an optical transducer and incremental signal processing, permitting the fast, precise, location of the assembly throughout the wavelength range, without the need for peak search routines. This gives the instrument not only an extra channel, but also the full capabilities of a monochromator. The outstanding advantage of this technique is that the same optical characteristics apply to both the simultaneous and sequential measurements so that the measurements are directly comparable.

Because both systems observe the same area of the plasma, using the same entrance optics and slit, full advantage can be taken of the reproducibility improvements provided by the use of internal standards, for example a fixed channel can be used as an internal standard in a sequential measuring program and vice versa.

ICP Entrance Optics

Chromatic aberration is a severe performance limiting factor where lenses are used to transfer the light from the ICP to the spectrometer. This can only be optimised for one specific wavelength since the focus varies with wavelength.



Reduced flow torch combines performance with economy.

Another limiting factor is that the observation zone in the ICP is a long narrow area and spherical lenses cannot match this area to the long narrow area of the entrance slit.

The PV8060 overcomes both these limitations by the use of magnesium fluoride coated mirrors, one spherical and one cylindrical. The light is focussed vertically by the spherical mirror, and horizontally to match the entrance slit width by the cylindrical mirror, maximising the transfer of light.

Stability

The measurement of vacuum ultraviolet lines has previously



Philips PV 8060 Series Optical Emission Spectrometer.

been carried out using either a vacuum spectrometer or by flushing with either nitrogen or argon at atmospheric pressure. Where a vacuum spectrometer is used, medium term performance is limited by oil pollution of the entrance optics caused by polymerised oil deposits from back-streamed vacuum oil. Similarly, with conventional flush systems the spectrometer pressure varies with the atmospheric pressure, resulting in a need for continual reprofiling.

The PV8060 overcomes both these problems by using a constant low pressure argon atmosphere inside the spectrometer, the pressure being maintained at 600 mbar. At this pressure the back-streaming of oil is eliminated. Wavelength changes do not occur since the pressure is stabilised by means of an absolute pressure transducer.

Naturally, the spectrometer is fitted with anti-vibration mounts and the ICP is coupled to the spectrometer by an optical bench.

Dynamic Range

The newly-developed microprocessor-controlled measuring system, based on the use of mini-integrators has a dynamic range of $4 \times 10^6:1$. This allows the inherently wide dynamic range of the ICP itself to be fully utilised.

High Stability Source

Philips ICP source is based on pioneering development work by Dr Boumans and his team in the company's central research laboratories. Its use of 50 MHz plasma generation was considerably ahead of the general trend towards higher frequency operation which emerged in the mid-1980s. The directly coupled, free running generator delivers constant power into the plasma, despite impedance changes caused by sample introduction. This is effected by allowing the frequency to vary slightly, which is not possible with crystal-controlled systems.

As no complicated impedance matching is required, start-up is

by a single push-button — now a common feature, but again a Philips first.

Economical torch option

Recently added to the choice of system options is a reduced flow torch, which provides argon economy without the need to exchange the standard source unit and nebulizer.

The 50 MHz level is a convenient frequency at which to operate a torch of this type. Because of the large plasma produced, sample aerosol is easily introduced — and power levels similar to those for a standard torch can be employed to maintain analytical performance.

Practical trials with aqueous solutions show that detection limits range between parity and a factor of 2-3 higher than those of the standard torch (Figure 2). The difference is thus insignificant for most applications. When set against the savings obtainable by limiting argon consumption to around 8-9 l/min.

Powerful, Simple Software

The ES40 analytical software for DEC computers enables full advantage to be taken of the wide-ranging system capability. Clear menus make programming an easy matter, while help messages are available at all stages to give additional guidance. As familiarity increases, users can also employ three-letter commands to move rapidly to any part of the software. And the ability to run ES40 under a multi-user, multi-tasking operating system means that program entry, measurement and calculation can proceed simultaneously.

Another helpful feature is the inclusion of a line data base, providing a convenient reference listing the element wavelengths that may be required in setting up scanning channel programs.

For quantitative analysis, the wide dynamic range offered by the ICP technique means that most calibrations can be obtained using simple two-point standardisation.



ALLTECH NEW ZEALAND

New Zealand's only exclusive Chromatography supplier

For all that's best in Chromatography supplies from:

- ALLTECH-APPLIED SCIENCE
- WESCAN - for ion chromatography
- SGE - for Syringes, Capillaries, HPLC, etc
- RHEODYNE - for LC Valves
- VALCO - for GC and LC Valves
- HAMILTON - for microinjection
- S.S.I. - for modular LC, Valves & Fittings
- PHOTOVAC - for air pollution control



ALLTECH-APPLIED SCIENCE

P.O.Box 33-527 Takapuna, Auckland 9

Phone: (09) 444-3230 • Fax: (09) 444-2399

COMPANY LISTING

1 ABELS LIMITED **CD**
101 Carlton Gore Road, Newmarket
Private Bag, Newmarket, Auckland. Phone 548-145

Wellington Phone 687-924
Christchurch Phone 480-691
Dunedin Phone

Refiners and producers of edible oils and fats for NZ and export markets. Advanced analytical laboratory used for research, quality control and consulting work.

2 ADVANCED ANALYTICAL **AE**
1/6 Argus Place, Takapuna
P.O. Box 36-280, Northcote. Phone 419-1448

Suppliers and servicers of scientific instrumentation for chemical analysis.

3 AHI BENCHLINE INDUSTRIES **B**
20 Mt Wellington Highway, Panmure, Auckland
P.O. Box 14-138, Panmure. Phone 574-079

42 Lane St, Upper Hutt
P.O. Box 40-014, Upper Hutt Phone 288-105
9 Mortimer Place, Sydenham, Christchurch
P.O. Box 7435, Sydenham, Christchurch Phone 65-363

Manufacturing Company producing laboratory work surfaces (EURO-TECH and EUROFORM 2), Sinks, Bathroomware. A unit of Alex Harvey Industries Limited.

4 ALLIED CORPORATION (N.Z.) LTD **D**
P.O. Box 39-189, Auckland West
Phone 771-313

5 ALLTECH ASSOCIATES INC **AB**
P.O. Box 33-527, Takapuna, Ak 9
Phone 444-3230 Fax 444-2399

Subsidiary of major US chromatography supplier, and distributors of chromatography products for other internationally recognised manufacturers.

6 ALPHA BIOLOGICALS LTD **C**
6 Fencible Drive, Howick
Phone 534-4424

Microbiological quality control laboratory. Telrac registered for testing foods, cosmetics, waters, sewage and effluents.

7 ALPHATECH SYSTEMS LTD & CO. **A**
35 Scarborough Tce, Parnell, Auckland
P.O. Box 37-583, Parnell. Phone 770-392
Telex NZ21433 Fax 398-514

10 Myrtle St, Newtown.
P.O. Box 16080, Wellington Phone 848-275
318 Moray Place, Dunedin.
P.O. Box 5781, Dunedin Phone 740-122

Importers and distributors of scientific and medical equipment.

8 AJAX CHEMICALS **D**
17 Olive Rd, Penrose, Auckland
Phone 592-593 and 596-956

Chemical importers and distributors.

9 ANALABS **C**
M/657 Great South Road, Penrose Phone 597-265
P.O. Box 17-198

Newly established analytical facility in N.Z. Associated with a group of nine other laboratories in Australasia. Will be carrying out routine AAS, GLC, HPLC, fire assay and classical chemistry in N.Z. Access to XRF, XRD, SEM and ICP through associates in Australia.

10 APPLIED INSTRUMENTS LTD **EF**
P.O. Box 62-010, Sylvia Park, Auckland
Phone 592-633

Importers and distributors of industrial instrumentation.

11 ASL CAMBRIDGE **C**
(Analytical Services Ltd)
85 Queen St, Cambridge
Private Bag, Cambridge
Phone (071) 274-409
Fax (071) 274-495

Commercial analytical laboratory specialising in soil and plant analysis for components of nutritional significance. TELARC registered. Also expertise in feedstuffs, fertiliser, growing media, waters, etc.

12 ALLAN ASPELL & ASSOCIATES LTD **C**
34 Constellation Drive, Mairangi Bay.
Phone 478-2962

Public analysts and scientific consultants. Routine analysis and specialist investigations. Telarc registered laboratory. Microbiologists.

APPLIED GEOLOGY ASSOCIATES LIMITED
see no. 135

ASSOCIATED PROCESS CONTROLS LTD
see no. 136

AUCKLAND DAIRY LABORATORY (MAF)
see no. 137

13 AUCKLAND INDUSTRIAL DEVELOPMENT DIVISION (DSIR) **C**
9 Albert St, Auckland
P.O. Box 2225, Auckland. Phone 34-116 Fax 370-618

A division of the industrial group of DSIR, in the field of material science, corrosion, welding, metallurgy, and surface analysis.

14 DELETED

15 AUCKLAND VALVE & FITTING CO. LTD **AB**
26 Ryan Place, Manukau City, Auckland
P.O. Box 97-687, Sth Auckland Mail Centre.
Phone 278-6164

Christchurch Valve & Fitting Co. Phone 381-830
New Plymouth Phone 79-535

Specialists in valves and fittings and the installation of laboratory gas systems.

16 AUSTIN CHALK CO. LTD **D**
1 Stone St, Kaiapoi
Phone 6119

Works, View Hill, Oxford Phone 24-349

Manufacturers of texture surface coatings, contract manufacturers, manufacturers of industrial minerals and fillers, agricultural and industrial lime products, building products, clays, bone flour, and anti-graffiti coatings.

17 AVERY NEW ZEALAND LTD **AE**
21-23 Pretoria Street, Lower Hutt
P.O. Box 44-155 VIC, Lower Hutt. Phone 698-588

7C First Avenue, Whangarei Phone 84-872
17-19 Teed St, Newmarket, Auckland Phone 502-072
64 Commerce St, Hamilton Phone 75-459

2 Newton Trade Centre,
Newton Rd, Mt Maunganui South Phone 52-318

322 Aberdeen Rd, Gisborne Phone 74-479

27 Carlyle St, Napier Phone 54-602

194 Courtenay St, New Plymouth Phone 83-907

57 Ingestre St, Wanganui Phone 56-064

3/1005 Tremaine Ave, Palmerston North Phone 88-680

80 Kingsley St, Christchurch Phone 65-119

62 Sturdee St, Dunedin Phone 53-227

42 Gloucester St, Nelson Phone 87-798

1 Bank St, Timaru Phone 89-488

39 Gala St, Invercargill Phone 84-737

Shops 11 & 12, Raiwaga Shopping Centre,
Suva, Fiji Phone 383-423
Manufacturers, importers and suppliers of electronic and mechanical weighing and counting machines, including analytical and top-pan balances.

DOW CORNING SILICONES

FOR PERFORMANCE & RELIABILITY

The development of silicones and other specialised technologies by Dow Corning's Research & Development have enabled them to produce a wide range of silicone products for numerous applications in almost every industry.

Products include:—

SILICONE FLUIDS

Lubricants
Damping Fluids
Dielectric Compounds & Fluids
Hydraulic Fluids
Polish Additives
Cosmetic Additives
Processing Aids-PU Foam

SILICONE RESINS

Paint Additives
High Temperature Paints
Insulating Varnishes
Paper Release Coatings
Resin Intermediates
Water Repellents

SILICONE RUBBERS

Construction Sealants
Gaskets-formed in place & fabricated
Moulding Rubbers
Electrical/Electronic potting, encapsulation & insulation
Protective Coatings
Heat Vulcanised Rubber

SILICONE EMULSIONS

Defoamers
Mould Release
Textile Water Repellent

LUBRICANTS

Silicone Greases
Molykote^R Lubricants

Common Dow Corning Trade Marks — DRI-SIL — FABRIGLIDE — MOLYKOTE — SIGHT SAVERS — SILASTIC — SYLGARD — SYLOFF.

DOW CORNING



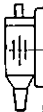
DOW CORNING NEW ZEALAND
5 PORTAGE ROAD, NEW LYNN, AUCKLAND (UNIT 4)
TELEPHONE 874-121, 873-912. TELEX 2962. FAX 872-046
P.O. BOX 15-404 NEW LYNN

INTRODUCING

"BAG IN THE BOX"

SOLUTIONS

3 OR 4 LITRES

 <p>VOLUMETRIC REAGENTS N/10 SILVER NITRATE N/10 SODIUM THIOSULPHATE N/10 CERIC SULPHATE N/1, N/10, ETC. SULPHURIC ACID HYDROCHLORIC ACID SODIUM HYDROXIDE ETC. ALSO AVAILABLE AS AMPOULES FOR DILUTION</p>	 <p>BUFFERS pH 4.00 pH 6.8 pH 9.2 OR AS REQUIRED</p>	 <p>MISCELLANEOUS SOLUTIONS REAGENTS FOR WATER ANALYSIS REAGENTS FOR GAS ANALYSIS (OHSAT) FREEZING POINT STANDARDS INDICATORS STAINS MANOMETER FLUIDS</p>
---	--	---

ALL SOLUTIONS ALSO AVAILABLE IN 100ml, 500ml, 1 LITRE, 2 LITRE, 5 LITRE ETC CONTAINERS

SWIMMING POOL TEST KIT & REAGENTS
FOR MEASURING CHLORINE, pH, ALKALINITY, HARDNESS, ETC.
FOR MUNICIPAL, SCHOOL OR HOME SWIMMING POOLS.

(OIL) ACIDITY TEST KIT
eg TRANSFORMER OIL
TPA SPOT TEST REAGENTS FOR BORDON, COPPER ETC.

SPECIALITY PRODUCTS
STEEL MARKING ACID
FLUX FOR SOLDERING ALUMINIUM

TEST KITS AND SPOT TEST REAGENTS

CUSTOMER FORMULATIONS OR PARTICULAR STANDARDS

Orders or enquiries to
LABORATORY SUPPLIERS OR OURSELVES



FARMAC ENTERPRISES LTD.

57 Angle Street, Onehunga, Auckland 6.
Telephone (09) 668-186 Fax 510-120

18 AWA NEW ZEALAND LIMITED

P.O. Box 50-248 Porirua.
Phone 370-159

P.O. Box 1363 Auckland
P.O. Box 8421 Christchurch
P.O. Box 5070 Dunedin

Suppliers of scientific, medical and electronic engineering instruments components and systems.

Phone 760-129
Phone 388-160
Phone 777-485

19 BASF N.Z. LTD

P.O. Box 407, Auckland
Phone 644-371

P.O. Box 13248, Christchurch
P.O. Box 44032, Lower Hutt

Importers and manufacturers representatives.

Phone 50-849
Phone 693-069

20 BAYER N.Z. LTD

Marine Parade, Petone
Phone 688-176

27-33 Lansford Cres, Auckland
105 Rutherford St, Christchurch
203 S Nelson St, Hastings

Subsidiary of Bayer AG Leverkusen.

Phone 889-159
Phone 843-136
Phone 60-259

BEHRING DIAGNOSTICS : HOECHST

NZ LTD.

See No. 138

21 BDH CHEMICALS NZ LTD

P.O. Box 1246, Palmerston North
Phone 82-038

Importer of laboratory chemicals.

22 R.A. BELL INSTRUMENTS LTD

P.O. Box 12-279, Wellington.
Phone 764-516

Repair, maintenance and manufacture of scientific instruments. Manufacturers of temperature control products, colorimeters, and pH meters.

23 BETA CHEMICALS (N.Z.) LTD

9 Lorien Place, East Tamaki, Auckland
Phone 274-4574

Wellington
Christchurch

Phone 734-781
Phone 66-882

Manufacturers of adhesives, sealants, plastisols, screen printing inks, specialised paints, solvents.

24 BETZ NEW ZEALAND

P.O. Box 4200, New Plymouth East
Phone 79-738

11 Paniar Cres Hamilton

Phone 69-419

Water treatment specialist and consultant in associated engineering services.

25 BLAXALL SCIENCE COMPANY

P.O. Box 25-095, Christchurch
Phone 62-828

Importing/wholesale company dealing mainly with optical and filter equipment.

26 BROWN & DUREAU (N.Z.) LTD

1-5 Wiremu St, Balmoral, Auckland
Phone 608-438

12 Fifeshire Ave, Wellington. Phone 850-398
453 Asaph St, Christchurch. Phone 64-336

Importers and manufacturers' representatives, supplying raw materials to the food, pharmaceutical, cosmetic, agricultural and industrial sectors.

A 27 ROBERT BRYCE & CO. LTD

Barnes St, Seaview, Lower Hutt.
P.O. Box 30-145, Lower Hutt. Phone 683-559

72 Hayr Rd, Mt Roskill, Auckland 4

P.O. Box 27056, Mt Roskill
Cnr Phillips & Leeds Sts, Christchurch
P.O. Box 1691, Christchurch

Phone 656-169

Phone 60-752

Importer and wholesaler of industrial chemicals, plastics, food additives and commodities.

D 28 G. BUCHAN WATER TREATMENT

92 Ellice Rd, Glenfield, Auckland
P.O. Box 65-040, Mairangi Bay. Phone 444-8209

Involved in all aspects of chemical metering and control for water treatment and other industrial applications. Also involved in sewage processing with extended aeration.

D 29 CARBORUNDUM N.Z. LTD

244 Archers Rd, Takapuna, Auckland
P.O. Box 30-069, Takapuna North. Phone 444-3860

Manufacturers of all coated abrasives, some bonded abrasives and some nylon abrasives.

CARINA CHEMICAL LABORATORIES LTD

See No. 139

D 30 CASTROL N.Z. LTD

P.O. Box 11-047, Wellington
Phone 843-978

Port Rd, Seaview, Lower Hutt

Cnr Hamer & Jellicoe Sts,
Freemans Bay, Auckland

504 Cranford St, Papanui, Christchurch

Phone 683-049

Phone 796-460

Phone 526-099

Manufacturers and marketers of lubricants and allied products.

D 31 CATOLEUM NEW ZEALAND LTD

44 Cryers Rd, East Tamaki, Auckland
Phone 274-5032

Suppliers of chemicals and technical services in the areas of water treatment for boilers, cooling systems, clarifiers and effluent systems. Also process chemicals for paper mills, refineries, petrochemical plants and the mining industry.

C 32 CAWTHON INSTITUTE

98 Halifax St, Private Bag, Nelson
Phone 82-319

P.O. Box 38-213, Howick, Auckland

Phone 535-9024

Independent scientific research institute offering consulting and testing services in chemistry, microbiology, biotechnology and environmental consulting. TELARC registered in chemistry and microbiology.

CERAMIC ENGINEERING LTD

See No. 140

AB 33 CHEMBY CHEMICALS LTD

Poland Rd, Takapuna, Auckland 9
P.O. Box 30-066, Takapuna. Phone 444-4650

Manufacturers of a range of surfactants, pigment dispersions, de-foamers and other process aids.

CHEMBY MARKETING

See No. 141

D 34 CHEMICAL CLEANING LTD

Totara St, Mt Maunganui Sth
Phone 53-157

201-203 Fraser St, Timaru

Phone 45-025

Suppliers of commodity chemicals, proprietary detergents, fungicides, bottle washing compounds, aluminium echants, bleaches and sequestrants.

ANALYTICAL & CONSULTING SERVICES

We can provide the above services in the fields of
Chemical & Bacteriological Analysis:

- Foods
- Animal By-Products
- Oils — Food & Mineral
- Cosmetics/Toiletries
- Fertilizers
- Pharmaceuticals
- Industrial Processes
- Insurance Loss Adjustments
- Your Own Specific Requirements

Write or Phone for further information

Scientific and General Consultants Limited

P.O. Box 13-219 Onehunga
Auckland 6. Ph: (09) 642-593

Member of the New Zealand Association of Consulting Laboratories



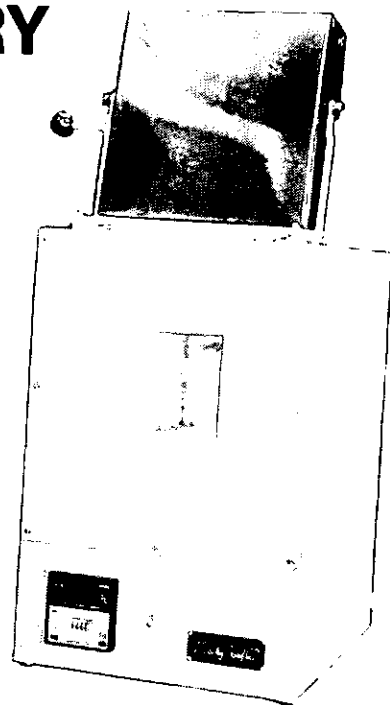
LABORATORY FURNACES

LAB 1 & 2 & 3

Hard sillimanite muffle
Impervious to gas
High abrasive resistance
Digital controller
LAB 1 125W × 100H × 300L
LAB 2 178W × 127H × 355L
LAB 3 205W × 205H × 460L

NEW LAB 150 & 200

Soft Fast Heating Muffle
0-1000°C in 20 min.
Ideal for Oxidizing
Digital Controller
NEW LAB 150
150W × 150H × 300L
NEW LAB 200
200W × 200H × 300L



W. D. McGREGOR LIMITED (Est. 1946)

MANUFACTURERS OF INDUSTRIAL HEATING EQUIPMENT
ELECTRIC FURNACE, KILN AND OVEN MANUFACTURERS

McGregor

Telephone 694-119

118 Stoddard Rd, Mt Roskill, Auckland 4, New Zealand. Telex NZ 60192 'WDMG'

CHEMICAL PLANT LTD
See No. 142

35 CHEMICAL SERVICE LABORATORIES (1985) LTD **C**
3 Hardy St, Johnsonville, Wellington
P.O. Box 13-033, Johnsonville. Phone 787-037, 787-402
Analytical and consulting chemists, bacteriologists.

36 CHEMICAL SPECIALITIES LTD **D**
51 Angle St, Te Papapa, Auckland
P.O. Box 29-109, Auckland. Phone 668-618
Manufacturers of adhesives, sealers, polyester fillers, epoxy fillers and grouts and various other industrial chemicals. Contract packers.

37 DELETED

38 CHEMIPLAS AGENCIES LTD **ABDF**
60 Parnell Rd, Parnell, Auckland
P.O. Box 37-408, Parnell. Phone 793-466
Terrace House, 4 Oxford Tce, Christchurch
P.O. Box 1616, Christchurch Phone 61-255
AA House, 166 Willis St, Wellington
P.O. Box 2137, Wellington Phone 847-332
A private company supplying raw materials to industry.

CHEMISTRY DIVN, DSIR
See No. 143

39 CHEMTEST LABORATORIES **ACE**
P.O. Box 63-097, Papatoetoe
Phone 274-5336
Servicing of water treatment equipment especially ion exchange. Supplier of chemical injection pumps. Analytical services for water, plant tissues and soils.

40 CIBA-GEIGY (N.Z.) LTD **D**
47-51 Patiki Rd, Avondale, Auckland
Private Bag, Avondale. Phone 883-149
P.O. Box 38-648, Petone Phone 687-333
Manufacturers of epoxy, resin, adhesives, agricultural chemicals, plastics, additives and pigments, textile chemicals and pharmaceuticals.

COATINGS TECHNOLOGY LTD
See No. 144

41 COMMERCIAL MINERALS LTD **D**
58 Ellice Rd, Glenfield, Auckland
P.O. Box 2679, Auckland. Phone 444-4521
Telex Commin 21025
6 Gasson St, Christchurch
P.O. Box 1802, Christchurch 2
Telex WABCHCH 4673 Phone 69-395
Importers of chemicals, industrial minerals, dyestuffs, pigments, textile auxiliaries, fatliquors and manufacturers of textile and leather auxiliaries.

42 CONTAMINATION CONTROL LTD
See Water Systems
No. 180

43 DAVID E. COOPER **C**
Consulting Environmental Chemist
P.O. Box 62, Mangawhai, Northland
Phone 68-596 Mangawhai
Consulting environmental chemistry on water, waste water and treatment. Air pollution and control backed up by laboratory work.

CROPPER HARCROSS
See No. 146

44 P.J. DAWSON LABORATORIES LTD **C**
41 Pembroke St, Hamilton
P.O. Box 178, Hamilton. Phone 80-251
Specialist analysts of pesticides and mycotoxins, also amino acids, vitamins. General industrial consulting.

DEAK INTERNATIONAL (NZ) LTD
See No. 147

45 DIVERSEY N.Z. LTD **DF**
P.O. Box 23-172, Papatoetoe, Auckland
Phone 278-2119
Speciality chemical manufacturers.

DIVISION OF HORTICULTURE AND PROCESSING, DSIR
See No. 148

46 DOW CORNING NEW ZEALAND **D**
4/5 Portage Rd, New Lynn, Auckland
P.O. Box 15-404, New Lynn, Auckland 7. Phone 873-912
Manufacturers of silicone fluids, resins, release agents, antifoams, and other silicone products.

DSIR
See Nos. 13, 143, 148, 168

47 DULUX **DF**
P.O. Box 31-048, Lower Hutt
Phone 694-729
P.O. Box 1009, Auckland Phone 577-159
P.O. Box 366, Lower Hutt Phone 684-259
P.O. Box 732, Dunedin Phone 779-670
P.O. Box 119, Christchurch Phone 797-650
P.O. Box 9255, Hamilton Phone 394-922
Division of ICI NZ Ltd, manufacturer of surface coating resins and unsaturated polyester resins. Supplier of spray equipment and fibreglass sundries.

48 DU PONT (N.Z.) LTD **D**
P.O. Box 76-256, Manukau City
Phone 277-8080
Importers.

49 EBBETT AUTOMATION LTD **E**
70-72 Victoria St, Petone
Instrumentation and control equipment, uninterruptable power supplies, inverters.

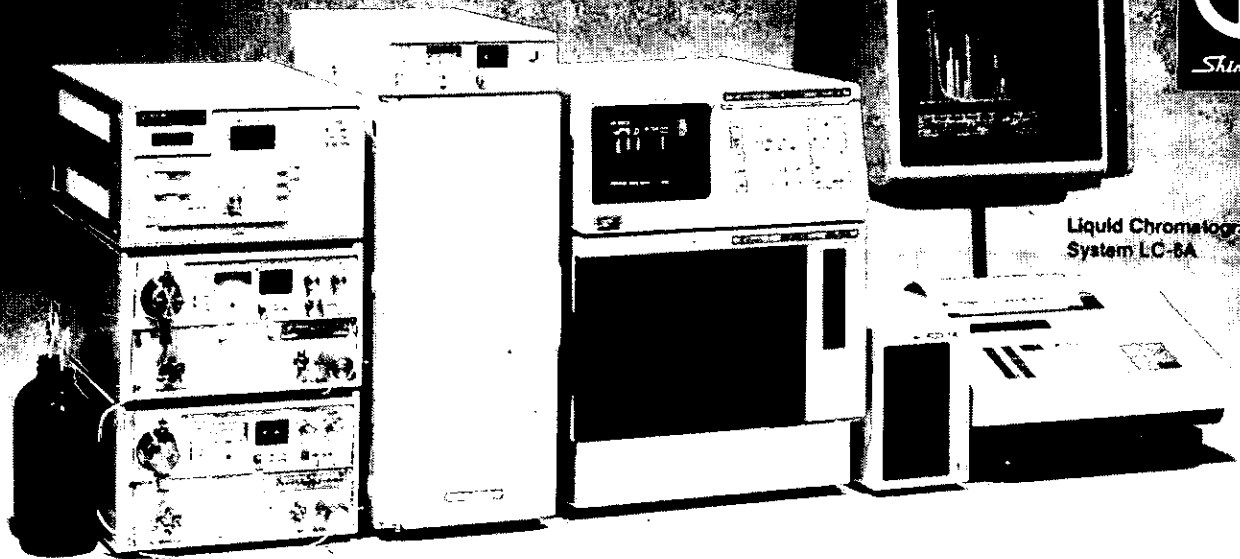
50 ELECTRIC MEASUREMENT & CONTROL LTD **E**
171 Target Rd, Auckland 10
P.O. Box 31-145, Milford, Auckland 9. Phone 444-9229
Importers and manufacturers of industrial instruments, controllers and electronic weighing equipment.

51 EMAIL INDUSTRIES **BCF**
6 Monahan Rd, Mt Wellington, Auckland
Phone 574-037
42 Cable St, Wellington Phone 859-578
6 Lincoln Lane, Christchurch Phone 69-892
Australian company with many Australian division represented in New Zealand.

52 ENGELHARD INDUSTRIES N.Z. LTD
See DEAK INTERNATIONAL (NZ) LTD
No. 147



Shimadzu



Liquid Chromatograph System LC-8A

SHIMADZU—THE BRAND OF RELIABILITY

For a variety of needs...

Shimadzu analytical and measuring instruments

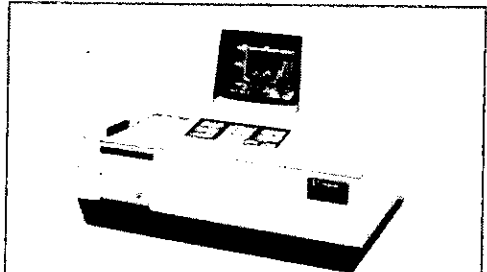
Automated analytical and measuring instruments of higher performance are the result of research and development in advanced technologies, quality control and laboratory automation.

Shimadzu has been a top manufacturer of analytical and measuring instruments since 1875. Advanced technologies in electronics, biotechnology and other fields are incorporated into the development of new products and applications technologies from a world-wide viewpoint.

AWA with twelve years experience marketing Shimadzu x-ray equipment are now proud to bring you the Shimadzu range of Scientific Instruments.

MAIN PRODUCT LINES — ANALYTICAL & MEASURING INSTRUMENTS

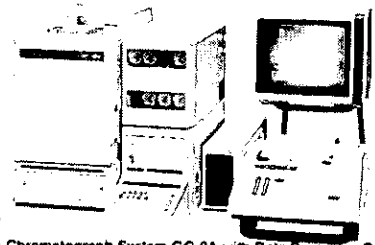
- Spectroscopic Apparatus
- Electromagnetic Analytical Apparatus
- Chromatographs
- Thermal Analysis Instruments
- Environmental Pollution Analyzers
- Balances and Balance Appliances
- Powder and Particle Property Analyzers
- Magnetometers
- Biotechnology Instruments
- Other Analytical and Measuring Instruments



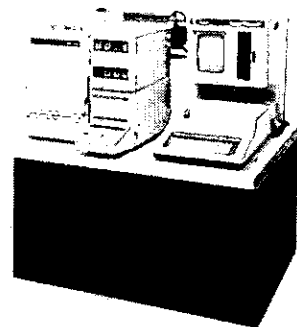
UV-VIS Double-beam Spectrophotometer UV-160



Flameless Atomic Absorption Spectrophotometer AA-670G



Gas Chromatograph System GC-9A with Data Processor C-R3A



Gas Chromatograph-Mass Spectrometer GCMS-QP1000

AWA SCIENTIFIC & MEDICAL

A DIVISION OF AWA NEW ZEALAND LIMITED

Auckland Box 1363 Ph: 760-129
 Wellington Box 830 Ph: 851-279
 Christchurch Box 32-054 Ph: 890-449
 Dunedin Box 5070 Ph: 777-485



Shimadzu

53 EQUUS INDUSTRIES LTD **D**
 4 North St, Blenheim. Phone 80-214
 Plant: Sheffield St, Riverlands Industrial Estate, Blenheim Phone 88-126
Private company manufacturing protective coatings for building and engineering industries. Able to design specific coating systems to provide optimal performance. Service orientated with its own laboratory facilities manned by staff experienced in the coatings and paint industry.

54 FARMAC ENTERPRISES LTD **D**
 57 Angle St, Onehunga, Auckland 6 Phone 668-186
Manufacturers of standard solutions, buffers, indicators, etc. for laboratories; test kits, reagents etc. for water and swimming pool analysis, T.P.A. spot tests, etc.

55 FARMERS FERTILISER LTD **CD**
 Private Bag, Auckland Phone 793-001
 Whangarei Fertiliser Works, Whangarei Phone 82-959
 Fertiliser & Chemical Complex, Otahuhu Phone 276-3808
 Morrinsville Fertiliser Works, Morrinsville Phone 7119
 New Plymouth Fertiliser Works, New Plymouth Phone 79-089
Manufacturer and marketer of fertilisers, industrial chemicals, agricultural chemicals and animal remedies.

56 W. ARTHUR FISHER LTD **AEF**
 525 Great South Rd, Penrose P.O. Box 12-747, Auckland. Phone 592-629
 P.O. Box 514, New Plymouth Phone 88-128
 P.O. Box 30951, Lower Hutt Phone 694-702
 P.O. Box 4158, Christchurch Phone 67-692
Process control equipment engineers and importers. Suppliers of total control systems including equipment project management, installation, engineering and service.

57 FLINDERS COOK (TECHNICAL SERVICES) LTD **C**
 2nd floor, 3 Fenton St, Eden Tce, Auckland 1 P.O. Box 437, Auckland. Phone 33-465
 72-82 Taranaki St, Wellington Phone 858-422
Analytical and consultant laboratory, also involved in consulting to the oil industry and bulk liquid surveyors.

58 FORT RICHARD LABORATORIES LTD **BCD**
 P.O. Box 22-172, Otahuhu Phone 276-5569
Microbiological supply and consultancy.

59 GAF (AUSTRALASIA) PTY LTD **DF**
 15-23 Station Rd, Otahuhu, Auckland Phone 276-1460
GAF are chemical importers of raw materials, specialised chemicals and liquid filtration equipment.

GAMLEN CHEMICAL CO.
 See No. 150

GCNZ CONSULTANTS LTD
 See No. 151

60 GEOCHEMISTRY RESEARCH LTD **C**
 27 Voltaire St, Karori Wellington. Phone (04) 764-078
Chemical and Geochemical consulting with special expertise in minerals and industrial chemistry, mineral exploration, mineral characterisation, analysis, reactions, industrial utilisation and processing. Petroleum exploration geochemistry.

61 GIBCO N.Z. LTD **ABF**
 18-24 Botha Rd, Penrose, Auckland 6 P.O. Box 12-502, Penrose. Phone 593-024
 P.O. Box 3390, Wellington Central
 P.O. Box 6081, Upper Riccarton, Christchurch
Biologicals processor and supplier. Retail supplier of laboratory equipment and consumables.

62 GOUGH TECHNOLOGY LTD **A**
 P.O. Box 22-073, Christchurch Phone 798-740 Fax 796-776
 P.O. Box 68-150, Auckland Phone 763-174
 P.O. Box 38-421, Petone Phone 686-675
 P.O. Box 1193, Dunedin Phone 775-823
Marketers of a range of test equipment.

W.R. GRACE (NZ) LIMITED
 See No. 153

63 W. GRAYSON & ASSOCIATES LTD **C**
 100 O'Rorke Rd, Penrose, Auckland P.O. Box 12-545, Penrose, Auckland Phone 590-329, 665-520
Analysts, consultants, development chemists, industrial chemistry, microbiologists, plastics consultants, forensic scientists and arson investigators. Development of new products for manufacturers and distributors who do not have laboratory facilities.

HAMILTON ANALYTICAL LABORATORIES
 See No. 154

HAMILTON MEDICAL LABORATORIES
 See No. 155

64 HARDIE TRADING LTD **D**
 P.O. Box 1367, Auckland Phone 592-024
 11 Downer St, Lower Hutt Phone 693-254
 272 Tuam St, Christchurch Phone 61-209
Importer and distributor.

65 A.C. HATRICK (N.Z.) LTD **D**
 P.O. Box 2359, Auckland Facsimilie (09) 797-979 Phone 32-695
 Avondale Plant, Patiki Rd, Avondale Phone 887-007
 Facsimilie (09) 881-066
 Wellington Plant, Main Rd, Tawa Phone 327-199
 Facsimilie (04) 324-781
Synthetic resin manufacturer and chemical merchandising company.

66 DELETED

67 HAZARDS ANALYSIS LTD **C**
 8 Silverstream Rd, Crofton Downs, Wellington 4 Phone 791-388
Analysis of hazards involving flammable vapours and dusts and also toxic chemicals. Services include analysis of causes of accidents and recommendations for preventative procedures, chemical plant safety audits, 1/2 day safety training programmes.

68 HEALING INDUSTRIES LTD CHEMICAL DIVISION **D**
 P.O. Box 14-147, Panmure, Auckland. Phone 527-7029
 P.O. Box 14-062, Wellington Phone 872-009
 P.O. Box 444, Christchurch Phone 795-988
 P.O. Box 2151, Dunedin Phone 56-034
Manufacturers and marketers of processing chemical products and service lines to industry, covering wood adhesives, metal finishing products, hand care and janitorial products, water treatment products.

ROCHE

Your partner in Science and Health

ROCHE DIAGNOSTIC

REAGENTS

- Clinical Chemistry • Microbiology
- Immunology • Coagulation
- In vivo diagnostics • TDM

TOTAL SYSTEMS

- EIA • Coagulation • Micro ID
- Bloodcultures • TDM

INSTRUMENTS

- Centrifugal analysers
- Random-access analysers
- Automated microbiology • TDM
- EIA • Coagulation

KONTRON INSTRUMENTS

ANALYTICAL

- Ultracentrifuges • Highspeed centrifuges
- Spectrophotometers • Spectrofluorometers
- ICP Systems • HPLC Systems • Nuclear counters
- Bloodgrouping • Amino acid analysers

MEDICAL

- Monitoring • Bloodgas • Diagnostic ultrasound
- Fetal monitors • Medical image analysers



ROCHE PRODUCTS (NZ) LTD

P.O. Box 12-492, Penrose, Auckland. Telephone 640-029.



69 HEWLETT PACKARD
5 Owens Rd, Epsom, Auckland
P.O. Box 26-189, Auckland. Phone 605-651
184-190 Willis St, Wellington 3
Box 9443, Courtney Place Phone 854-065
Suppliers of instrumentation, electronic measuring equipment, computers and controllers.

R.J. HILL LABORATORIES
See No. 156

70 HOECHST N.Z. LTD
21-39 Jellicoe Rd, Panmure
C.P.O. Box 67. Phone 578-068
P.O. Box 7076, Sydenham, Christchurch Phone 50-257
P.O. Box 38-169, Petone, Wellington Phone 730-506

Importer and distributor of agricultural, horticultural, industrial, pharmaceutical and veterinary chemicals.

71 B.R. HOMERSHAM LTD
155 Roydvale Ave, Christchurch
P.O. Box 280, Christchurch. Phone 588-309
Unit A, 119 Captain Springs Rd, Onehunga, Auckland
P.O. Box 12-258, Penrose Phone 641-984
50 Victoria St, Lower Hutt, Wellington
P.O. Box 30-593 Lower Hutt Phone 662-962
A private company supplying process control equipment to industry and research organisations both from overseas sources and local manufacture. Also suppliers and manufacturers of horticultural and irrigation equipment.

HORTICULTURAL RESEARCH LABORATORIES
See No. 157

72 HOUSTON AUSTRALASIA LTD
P.O. Box 22-023, Otahuhu, Auckland
Phone 276-2473
Manufacturer and importer of process plant and equipment for the dairy, brewery, soft drinks and food industries.

73 THOMAS HYDE LTD
435 St Asaph St, Christchurch
P.O. Box 503, Christchurch. Phone 665-986
13 Rose Rd, Grey Lynn, Auckland
P.O. Box 9531, Newmarket Phone 761-508
Importers of medical and scientific equipment.

74 INDEPENDENT SERVICE LABORATORIES (ISL)
25 McPherson St, Richmond
Phone (054) 46-105, Fax (054) 46-106
Victoria St, Waihi Phone 8969
Industrial chemists, mining and exploration consultants and analysts (specialists in geochemistry). Experienced in method development for companies not having their own laboratory facilities.

75 INSAPIPE INDUSTRIES LTD
P.O. Box 58-056, East Tamaki, Auckland
Phone 274-4819
P.O. Box 22-432, Christchurch Phone 67-671
N.Z. owned private company. Specialists in manufacture and supply of building services and laboratories, including a complete design and build facility.

76 INSTRUMATICS (CONTROLS & SYSTEMS) LTD
17 Laureston Ave, Papatoetoe
Phone 276-7096
Process control engineers, providing complete installation services, design and consultancy, supply, installation and commissioning plus full maintenance service.

INTERMED SCIENTIFIC LTD
See No. 158

AE 77 IPSICO SALES & MANUFACTURING LTD
30 Salesyards Rd, Otahuhu
P.O. Box 22-342, Auckland
Phone 276-3639
Wellington Branch (Toll free) Phone 738-947
Air movement, treatment, filtration and control specialists.

78 IVON WATKINS-DOW LTD
Private Bag, New Plymouth
Phone 512-400
Feltex Centre, 145 Symonds St, Auckland
52 Essex St, Linwood, Christchurch
Bryant Rd, Te Rapa, Hamilton
Phone 799-664
Phone 68-739
Phone 493-939

IWD manufactures and formulates a wide range of products for agricultural chemicals, surfactants, emulsifiers and biocides. It also offers contract manufacturing, GC-MS and low level analysis services.

AEF 79 JOHNSON MATTHEY LTD
114 Penrose Rd, Auckland 6
Phone 595-039
Refiners and fabricators of precious metals. Suppliers of platinum group metal products and rare earth elements and compounds.

80 KEMPTHORNE MEDICAL SUPPLIES LTD
318 Richmond Rd, Grey Lynn, Auckland
P.O. Box 1234, Auckland. Phone 781-160
25 Harwood St, Hamilton
80 Adelaide Rd, Wellington
348 Manchester St, Christchurch
303 Great King St, Dunedin
Phone 75-073
Phone 850-299
Phone 792-050
Phone 771-065
Importers and distributors of general laboratory equipment and consumables to the health and science markets.

81 KENT INSTRUMENTS (N.Z.) LTD
P.O. Box 11-264, Ellerslie, Auckland
Phone 274-6099
P.O. Box 30-392, Lower Hutt
P.O. Box 2027, Christchurch
Phone 698-413
Phone 66-494
Imports, distributes and services process control instrumentation, complete when necessary with systems design.

LABSUPPLY PIERCE NZ LTD
See No. 159

82 LAWRENCE FLAVORS AND FRAGRANCES
12 Averton Place, East Tamaki
P.O. Box 58-193, E. Tamaki, Auckland.
Manufacturer and distributor of flavourings and fragrances.

83 LEVINGSTON BROS LTD
1 Beasley Ave, Penrose
P.O. Box 12-549, Penrose, Auckland
Phone 592-714, Fax 591-196
Manufacturers and suppliers of Vacuum pumps, fittings and accessories.

84 MACEWANS MACHINERY LTD
Process Equipment Division
706 Gt South Rd, Penrose
P.O. Box 12-845, Auckland
Phone 590-185
P.O. Box 5694, Hamilton
P.O. Box 640, New Plymouth
P.O. Box 3048, Wellington
P.O. Box 2648, Christchurch
Phone 79-034
Phone 85-669
Phone 723-888
Phone 796-780
Supplier of equipment and processes in the areas of water and effluent treatment, and product filtration.

85 S.D. MANDENO ELECTRONIC EQUIPMENT CO.
10 Woodhall Rd, Epsom, Auckland 3
Phone 600-008
Importer and supplier of electronic equipment and instrumentation.

INORGANIC REACTIONS AND METHODS

edited by J. J. Zuckerman

Volume 1: The Formation of Bonds to Hydrogen (Part 1)

1986. XXV, 326 pages, 6 figures and 21 tables. Hardcover. A \$ 155.00 subscription price; A \$ 191.00 individual volume price. ISBN 3-527-26259-8

Volume 2: The Formation of Bonds to Hydrogen (Part 2)

1986. Approximately 496 pages. Hardcover. A \$ 169.00 subscription price; A \$ 207.00 individual volume price. ISBN 2-257-26260-1

Volume 15: Electron-Transfer and Electrochemical Reactions; Photochemical and Other Energized Reactions

1986. XXIV, 400 pages with 61 tables. Hardcover. A \$ 169.00 subscription price; A \$ 207.00 individual volume price. ISBN 3-527-26273-3

This series will bring together for the first time in one place all of the knowledge constituting the discipline of modern inorganic chemistry. The latter is broadly defined to include not only the chemistry of the elements, but coordination compounds, donor-acceptor adducts, organometallic, polymer and solid-state materials, and compounds relevant to bioorganic chemistry as well as the analytical, physical and technical aspects underlying these subjects. The goal is to provide both a review of laboratory techniques and methods currently used in inorganic chemistry as well as an exposition of the entire synthetic arsenal available to inorganic chemists. Publication of the series starts with the 18 volumes that are devoted to inorganic reactions.

Australian dollar prices are estimates. The actual price will be calculated on the basis of the exchange rate at the time of billing.

For further information please contact:

D. A. Book (Aust.) Pty. Ltd.

P.O. Box 163, 11-13 Station Street

Mitcham, Vic. 3132

Telephone (03) 8 73 28 25 and 8 73 28 26

VCH

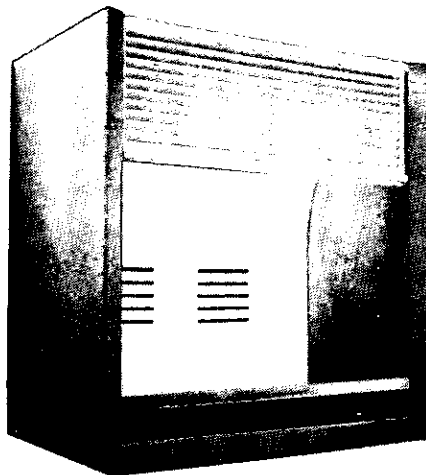
New Concept

PVC Fume Cabinets

Uncompromised Safety
and Real Cost Savings

Smoothflow

Registered Design 96640



- Designed to NZS 7203.
- Widely used in Australia since 1985.
- Slim design for 20% extra workspace.
- Aerodynamic front opening.
- Sash controlled bypass and clip-in baffles balance face velocity.
- Counterbalanced clear pvc sliding sash.
- Ceramic, stainless steel, glass, pvc or other work surface.
- Constructed from high quality pvc self coloured ivory or shadow.
- Standard depth 750mm
- Standard height 1220mm
- Widths to 1800mm
- Problem Solving and Design.
- Complete extraction systems.
- Fumeflow pvc centrifugal fans.

Proudly manufactured in New Zealand by
Chemical Plant Ltd.,
13 Patiki Road, Avondale, Auckland
Phone (09) 886-054



86 MASKELL PRODUCTIONS LTD
24 Bowden Rd, Mt Wellington.
P.O. Box 11-185, Ellerslie, Auckland
Phone 527-3299

Manufacturers of laboratory fume cupboards and exhaust systems, chemical storage tanks, fume scrubbers, ducts and fans, process vessels and pipes.

87 MAY & BAKER N.Z. LTD
P.O. Box 35-060, Naenae, Wellington
Phone 678-629

Subsidiary of May & Baker UK. Importers of laboratory chemicals.

88 W.D. MCGREGOR LTD
118 Stoddard Rd, Mt Roskill, Auckland
Phone 694-119

Manufacturer and distributor of furnaces and temperature control equipment.

MED-CHEM LTD
See No. 160

89 MEDIC CORPORATION LTD
19 Kings Cres., Lower Hutt
Phone 693-539

535 Parnell Rd, Auckland
18-20 Lake Rd, Hamilton
14 Vulcan Place, Marylands, Christchurch
141 Frederick St, Dunedin

Phone 32-979
Phone 72-728
Phone 381-936
Phone 740-722

Supplier to Medical and related industries. Divisions include Surgical, Dental, Laboratory Products, Electronic Servicing, Engineering/Manufacturing, Medical Equipment.

METALLURGICAL & INDUSTRIAL CONSULTANTS
See No. 161

METALLURGICAL SERVICES
See No. 162

90 MINTECH NZ LTD
P.O. Box 3029, Richmond
Phone (054) 45-750

11 Bowden Rd, Mt Wellington
Wellington Store (freefone)
Christchurch Store (freefone)

Phone 571-199
Phone (054) 45-546
Phone (054) 45-546

Industrial mineral processing with plants throughout NZ. Industrial minerals trading from throughout the world.

91 MOBIL OIL N.Z. LTD
P.O. Box 2497, Wellington
Phone 722-078

P.O. Box 1709, Auckland
P.O. Box 38-073, Seaview Rd, Lower Hutt
P.O. Box 2107, Christchurch

Phone 32-759
Phone 683-089
Phone 793-000

Oil company with marketing activities in the fields of fuels, lubricants, agricultural products, waxes, solvents and chemicals.

92 MOOYMAN & HORNBY LABORATORIES
P.O. Box 21-188, Christchurch
Phone 792-644

93 JOHN MORRIS SCIENTIFIC LTD
3/101 Diana Drive, Glenfield, Ak 10
P.O. Box 6348, Auckland. Phone 444-5836

4 Hardy St, Waterloo
P.O. Box 30-496, Lower Hutt

Phone 693-244

Supplying laboratory equipment and instrumentation to the scientific, industrial, medical and food laboratories.

MOSS INDUSTRIES LTD
See No. 163

94 NDA LABWARE LTD
2 Hotonui Drive, Mt Wellington
P.O. Box 22-125, Auckland 6.
Phone 276-5966. Fax 276-5527

Admiral Place, Palmerston North

Phone 87-142

A scientific wholesaler of laboratory glass and plasticware, consumables, equipment and instrumentation to industrial, medical and food laboratories.

BF

NECAL (Dept of Health)
See No. 164

95 NEILL CROPPER & CO. LTD
See Cropper Harcross, No. 146

NIRO ATOMIZER (NZ) LIMITED
See No. 165

96 N.Z.C.C.
P.O. Box 14, Keri Keri, Northland
Phone 160 Kaeo
Clay processing.

N.Z. HYDROPONICS
See No. 167

97 N.Z. INDUSTRIAL GASES LTD
P.O. Box 3337, Wellington
Phone 725-725

970-992 Great South Rd, Auckland
P.O. Box 22-065, Otahuhu, Auckland
Euclide Ave, Norris Ave, Te Rapa
Private Bag, Hamilton

606 Tremaine Ave, Palmerston North
P.O. Box 504, Palmerston North
Hutt Park Rd, Lower Hutt
P.O. Box 30-202, Lower Hutt
21-27 Epsom Rd, Sockburn

P.O. Box 11-161, Sockburn, Christchurch
Main South Rd, Burnside, Dunedin
P.O. Box 338, Dunedin

Manufacturer and supplier of industrial, medical and specialty gases, electric welding equipment, gas equipment, welding consumables and laboratory gas equipment.

98 N.Z. PHARMACEUTICALS LTD
P.O. Box 1869, Palmerston North
Phone Linton 676

Processing of natural raw materials into pharmaceuticals and fine chemical intermediates.

NEW ZEALAND SOIL BUREAU DSIR
See No. 168

NEW ZEALAND STEEL LTD
See No. 169

99 NORTHROP INSTRUMENTS & SYSTEMS LTD
P.O. Box 2406, Wellington
Phone 856-658

Private Bag, Newmarket, Auckland
P.O. Box 8788, Christchurch

Phone 794-091
Phone 795-360

A supplier of high technology equipment in the fields of science medicine and engineering.

PACIFIC ANALYTICAL LTD
See No. 170

100 PACIFIC RAW MATERIALS
P.O. Box 22-064, Otahuhu

Auckland Warehouse

Phone 87-142

Importers and distributors of all kinds of chemicals.

Auckland Warehouse

Phone 276-9118

Importers and distributors of all kinds of chemicals.



CHEMIPLAS

SUPPLIERS OF CHEMICALS FROM:

- **Allied Colloids Ltd, U.K.:** Acrylamide Flocculants and Specialty Chemicals
- **Avebe of Holland:** Specialty starches
- **The Boots Co. Ltd.:** Fine Chemicals
- **Degussa:** Aerosil etc.
- **Henkel Corporation, USA:** Guar and Locust Bean Gums
- **J.M. Huber Corporation, USA:** Clays
- **Commercial Minerals Ltd., Australia:** Zinc Dust & Iron Oxide Pigments
- **Gadot Petrochemical Co.,:** Citric Acid.
- **Nippon Zeon:** Synthetic Rubbers.
- **Uniroyal Chemical:** Rubber Chemicals & Synthetic Rubbers

SUPPLIERS OF PLASTICS FROM:

- **Mitsubishi Chemical Industries:** Novatec Polyethylenes, Novamid Nylons.
- **Asahi Chemical Industries:** Tenac Acetal.
- **British Industrial Plastics:** Beetle Surface-Coating Resins
- **Mitsubishi Gas Chemicals:** Iupilon Polycarbonates.

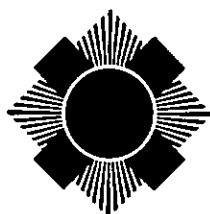
CONTACT:

CHEMIPLAS N.Z. LIMITED

Ph. 793-466 Auckland
P.O. Box 37-408
AUCKLAND

Ph. 693-888 Wellington
P.O. Box 31-165
LOWER HUTT

Ph. 661-255 Christchurch
P.O. Box 1616
CHRISTCHURCH



Allied Colloids

makers of

High-efficiency Polyelectrolytes for Water
Purification

Magnafloc flocculants for potable and waste water

Zetag flocculants for municipal sewage

New Zealand Agents CHEMIPLAS N.Z. LIMITED

Ph. 793-466 Auckland
P.O. Box 37-408
AUCKLAND

Ph. 693-888 Wellington
P.O. Box 31-165
LOWER HUTT

Ph. 661-255 Christchurch
P.O. Box 1616
CHRISTCHURCH

101 PETROLEUM CORPORATION OF N.Z. LTD

Petrocorp House, 86 Lambton Quay, Wellington
P.O. Box 1818, Wellington. Phone 739-812

Petrochemicals

P.O. Box 439, Hawera

Natural Gas Division,

Private Bag New Plymouth

Phone Okaiawa 849

Phone 70-861

Petrochemical industry involved in the treatment and supply of natural gas, manufacture of LPG, manufacture of anhydrous ammonia, manufacture of urea, manufacture of methanol.

PHARM CHEM RESEARCH LABORATORIES LTD

See No. 171

102 PHILIPS SCIENTIFIC & INDUSTRIAL PTY LTD

2 Wagener Place, Auckland 3
Private Bag, St Lukes, Auckland
Phone 894-160

Wexford Place, Mirimar,

P.O. Box 14-282, Wellington

Phone 889-788

Leading worldwide manufacturer of scientific and analytical equipment.

103 PLASFAB INSTALLATION (1977) LTD

24 Hill St, Onehunga, Auckland
P.O. Box 12143, Penrose. Phone 666-689

Plastic fabricators and designers of laboratory fume cupboards, exhaust and associated equipment. Also tanks for acid storage etc.

104 DELETED**105 PORTALS NEW ZEALAND LTD**

11 Spring St, Onehunga, Auckland 6
P.O. Box 13-558, Auckland 6.

P.O. Box 78, Hamilton

Wellington

373E Wilsons Rd, Christchurch

Invercargill

Process engineers. Specialists in water and wastewater equipment, pumping and mixing and pipeline equipment, cooling towers, control systems, and speciality chemicals for water treatment.

106 PROCESSED CHEMICALS INDUSTRIES LTD

P.O. Box 88, Silverdale, North Auckland
Phone (0942) 48-179

Equipment and consumables for water purification. Analyses for water, soil and plant materials.

107 QUIK STIK INTERNATIONAL LTD

P.O. Box 76-221, Manukau City
Phone 278-0939

20 Kings Cres, Wellington, P.O. Box 44-094

373 Wilsons Rd, Christchurch

Cnr George & Hanover Sts, Dunedin

Phone 695-194

Phone 64-729

Phone 772-301

Producers of pressure sensitive labels for identification and safety. Processable by hand, typewriter or EDP units.

108 REVERTEX INDUSTRIES (N.Z.) LTD

Industry Rd, Penrose, Auckland 6
P.O. Box 12-841, Penrose. Phone 592-029

Manufacturers of emulsion polymers, alkyd resins, polyester resins, polyurethane resins and coatings. 65% owned by Monsanto Australia Ltd, 35% N.Z. public holding.

D 109 RHEEMPAK, RHEEM N.Z. LTD

475 Rosebank Rd, Avondale, Auckland
P.O. Box 19-011, Avondale. Phone 883-088

P.O. Box 51-034, Tawa, Wellington

Phone 7189

Suppliers of plastic pharmaceutical containers, including tablet bottles, jars and liquid bottles.

RHONE — POULENC NEW ZEALAND LIMITED

See No. 172

110 ROCHE PRODUCTS N.Z. LTD

213 Church St, Te Papapa, Auckland
P.O. Box 12-492, Penrose. Phone 640-029

33 Olive Tce, Paraparaumu, Wellington

32 Howarth St, Fairfield, Dunedin

Phone 70-781

Phone 881-033

Full affiliate of F. Hoffman-La Roche and Co Ltd, Basle, Switzerland, marketing pharmaceuticals (ethical and OTC) vitamins and fine chemicals, and instrumentation (medical and analytical).

111 ROCKLABS

187 Morrin Rd, Glen Innes, Auckland 6

P.O. Box 18-142, Glen Innes. Phone 574-698

Manufacturer and exporter of laboratory sample preparation equipment.

ROSEMOUNT INSTRUMENTS NZ LTD

See No. 173

112 SALMOND SMITH—BIOLAB LTD SCIENTIFIC PRODUCTS DIVISION

39 Woodside Ave, Northcote, Auckland
Private Bag, Northcote. Phone 418-3039

410 Hutt Rd, Lower Hutt

P.O. Box 31-044, Lower Hutt

68 Orbell St, Christchurch

P.O. Box 1813, Christchurch

Phone 697-099

Phone 663-663

A N.Z. owned and operated public company with divisions operating in the medical and science, health and beauty, plastics and packaging manufacturing areas.

SCHOOL OF PHARMACY, C.I.T.

See No. 174

113 SCIENTIFIC ANALYTICAL LTD

22 Vogel St, Dunedin

P.O. Box 1355 Dunedin. Phone 772-204; 44-491 (a.h.)

General consultant and analyst for manufacturing and processing industries and agriculture related industries. Specialists in soil and plant analysis.

114 SCIENTIFIC & GENERAL CONSULTANTS LTD

57 Angle St, Onehunga, Auckland

P.O. Box 13-219, Onehunga. Phone 642-593

Analytical and consultant chemists. Public analysts.

115 SCIENTIFIC SERVICE LABORATORIES LTD

P.O. Box 3030, Onekawa, Napier

Phone 439-218

Small company specialising in the manufacture of corrosives, usually based on mineral acids, such as soldering fluxes, chemical pickles and etchants. Also design and build small scale chemical plants using industrial scale glassware.

New Zealand TECHSOURCE Directory

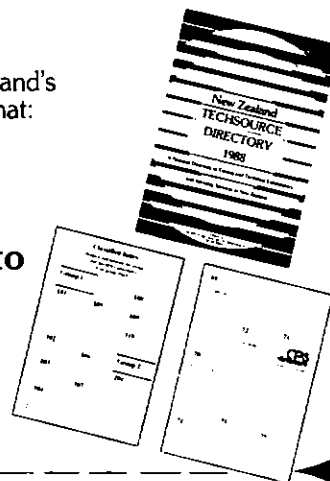
National Directory of Testing and Technical Consultancy Services in New Zealand

The TECHSOURCE Directory provides a comprehensive catalogue of New Zealand's testing and technical consultancy resources. The Directory lists organisations that:

- * Test products or materials
- * Provide measurement or calibration services
- * Provide consultancy or advisory services relating to Quality Control or Quality Assurance

Only \$25
plus GST, Total \$27.50

Cheque with order preferred but we can invoice with delivery if required.



Please supply _____
copies of the 1988
TECHSOURCE Directory
at \$27.50 each Please invoice ✓

Name _____

Address _____

TELARC Information Services

Private Bag, Remuera, Auckland 5. Phone (09) 541 045, TX 60159, Fax (09) 544 280.

Who Uses Ion Chromatography For Water Treatment Chemistry?

THE VERSATILITY OF DIONEX ION CHROMATOGRAPHY IN WATER TREATMENT

Dionex Ion Chromatography is the most versatile and powerful analytical technique available to the water treatment industry. In one instrument, as shown below, a host of other analytical methods can be replaced or supplemented. Producers, formulators and users of water treatment chemicals have all found a multitude of uses for Dionex Ion Chromatographs. Among the most common applications are:

PRODUCERS

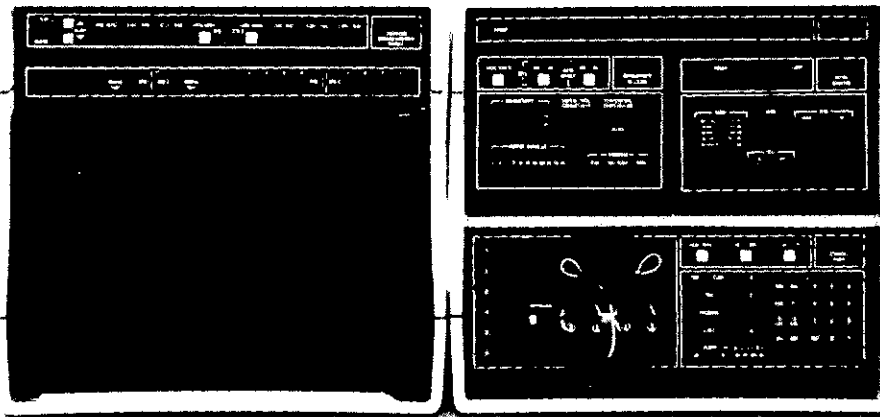
- Quality control analysis of impurities in water treatment chemicals
- Characteristics of new water treatment compounds
- Stability studies/identification of degradation products

FORMULATORS

- Incoming materials quality control
- Assay of formulations for proper balance of active components
- Efficiency studies on new formulations
- Customer technical service/troubleshooting
- Mobile lab analysis for customers
- Competitive product analysis

USERS

- Monitor source water characterizations for changes
- Determine demineralizer bed breakthrough
- Optimize feed rates of treatment chemicals
- Environmental monitoring of hazardous treatment chemicals



The Dionex Series 4000i.

THOMAS HYDE LTD

Head Office: CHRISTCHURCH
P.O. Box 503, Phone 65-986

Branch: AUCKLAND
P.O. Box 9531, Newmarket. Phone 761-508

116 **SCIENTIFIC SUPPLIES LTD** **ABD**
21 Lorien Place, East Tamaki Auckland
P.O. Box 14-454, Pakuranga. Phone 274-7579 274-8907

Wholesale suppliers of laboratory chemicals and disposables.

117 **SCI-MED DIVISION OF EBOS GROUP LTD** **AB**

24 Forth Street, Dunedin
P.O. Box 321 Dunedin
P.O. Box 68232 Auckland
P.O. Box 508 Wellington
P.O. Box 411, Christchurch

Phone 775-531
Phone 793-993
Phone 845-809
Phone 65-463

A wholly owned subsidiary company of the EBOS Group, supplying New Zealand and the South Pacific with scientific instrumentation, fully supported by our technical, marketing and service team.

SCOTT ELECTRONICS
See No. 175

118 **SHELL CHEMICALS N.Z. LTD** **D**
P.O. Box 2091, Wellington
Phone 720-080

Cnr Albert & Wyndham Sts, Auckland 1
Seaview Rd, Lower Hutt
P.O. Box 38-227 Petone
Chapmans Rd, Woolston, Christchurch

Phone 778-880
Phone 684-279
Phone 844-005

Chemical manufacturing and marketing company. Field of activities includes industrial chemicals, petrochemicals, polymers, plastics, surfactants and agricultural chemicals.

SHANAHAN SCIENTIFIC SERVICES
See No. 176

SORENSEN LABORATORIES
See No. 177

119 **STAUFFER CHEMICAL CO. N.Z. LTD**
MED CHEM LTD
See No 177

120 **STEVEN FITZMAURICE & PARTNERS LTD**
See Envirolab No. 149

121 **STEVENS CHEM INDUSTRIES LIMITED** **CD**
46 Ben Lomond Cres, Pakuranga, Auckland
P.O. Box 51-095, Pakuranga. Phone 569-049

Contract manufacturers of pharmaceuticals, cosmetics, toiletries and household products.

122 **SULKEM COMPANY LTD** **D**
40 Anzac Ave, Auckland
P.O. Box 2294, Auckland. Phone 390-769

Importers and traders of chemicals and raw materials.

123 **SWIFT NEW ZEALAND** **DE**
222 Station Rd, Penrose, Auckland
P.O. Box 2301. Phone 591-039

46-52 Abel Smith St, Wellington
P.O. Box 2328, Wellington
Amuri Courts, Durham St, Christchurch
P.O. Box 1611, Christchurch

Phone 856-707
Phone 62-851

Importers of chemicals, chemical raw materials, laboratory instruments and equipment, process control equipment and process equipment.

124 **TECHNICON EQUIPMENT PTY LTD** **A**
9 Central Rd, Kingsland, Auckland
P.O. Box 52-144, Auckland. Phone 895-120

329 Madras St, Christchurch
Phone 797-968

Principal of international company, specialists in continuous flow analysers and near infrared reflectance (NIR).

125 **TESTING LABORATORY REGISTRATION COUNCIL OF N.Z.**
Telarc House, 19 Mauranui Ave, Remuera, Auckland 5.
Private Bag, Remuera. Phone 541-045. Fax 540-962.

77 Durham St, P.O. Box 519, Christchurch
Phone 797-358

N.Z.'s quality assurance and testing laboratory accreditation organisation.

126 **THERMOPLASTIC ENGINEERING LTD** **BF**
151 Park Rd, Mirimar, Wellington
P.O. Box 25-038, Wellington. Phone 882-092

Plastic engineers, manufacturers and innovators specialising in fume cupboards, fume handling, fans, ducting and drying racks.

TOLEDO SCALE
See No. 178

TOWER BIOLOGICALS
See No. 179

127 **UNION CARBIDE N.Z. LTD** **D**
Private Bag, Sunnynook, Auckland 10
Phone 444-8046

P.O. Box 2542, Wellington
P.O. Box 18-577, New Brighton, Christchurch

Phone 695-475
Phone 844-507

Importers and manufacturers. Suppliers of chemicals, plastics, food products, carbon electrodes, cryogenic equipment.

128 **UPJOHN INTER-AMERICAN CORP** **D**
22 Kalmia St, Ellerslie, Auckland
Phone 591-345

2 Adelaide Rd, Wellington
218 Barbados St, Christchurch

Phone 849-987
Phone 60-201

Suppliers of human and veterinary pharmaceuticals, agricultural chemicals and pharmaceutical fine chemicals.

WATER SYSTEMS
See No. 180

129 **WATSON VICTOR LTD** **ABE**
4 Adelaide Rd, Wellington
P.O. Box 1180, Wellington. Phone 857-699

616-618 Great South Rd, Ellerslie, Auckland
P.O. Box 1216, Ellerslie
Unit 14, Peterborough Lane,
P.O. Box 706, Christchurch.

Phone 593-039
Phone 69-282

Cnr Clyde & Albany Sts, Dunedin
P.O. Box 921, Dunedin
Phone 777-291

Subsidiary of Fisons Group U.K. Suppliers of laboratory instruments, process systems and industrial equipment.

130 **WILTON INSTRUMENTS DIVISION OF SALMOND SMITH BIOLAB LTD** **AE**
410 Hutt Rd, Lower Hutt
P.O. Box 31-044, Lower Hutt. Phone 697-099

Woodside Ave, Northcote, Auckland
68 Orbell St, Christchurch

Phone 418-3039
Phone 663-663

Supplier of laboratory instruments and process systems. Full service capability with factory trained service engineers.

Inject new life into your old LC.

Introducing the HP 1050 Series of HPLC modules.

The next time you add LC capabilities or replace an aging HPLC component, consider Hewlett-Packard. Our new HP 1050 Series of stand-alone HPLC modules lets you upgrade to the HP quality you always wanted but thought was out of reach.

Grown out of the same innovative technology that produced the renowned, top-of-line HP 1090 family of HPLC systems, the HP 1050 Series brings you all the performance and reliability you've been missing — at a pace you can afford.

Add broad spectrum capabilities a piece at a time

Select from a range of compact, stackable, easy-to-use modules for solvent delivery, autosampling and UV-Visible detection. Available now are both isocratic and quaternary pump modules, variable and multiple wavelength detectors, and 21- and 121-vial autosampler modules. And more are on the way.

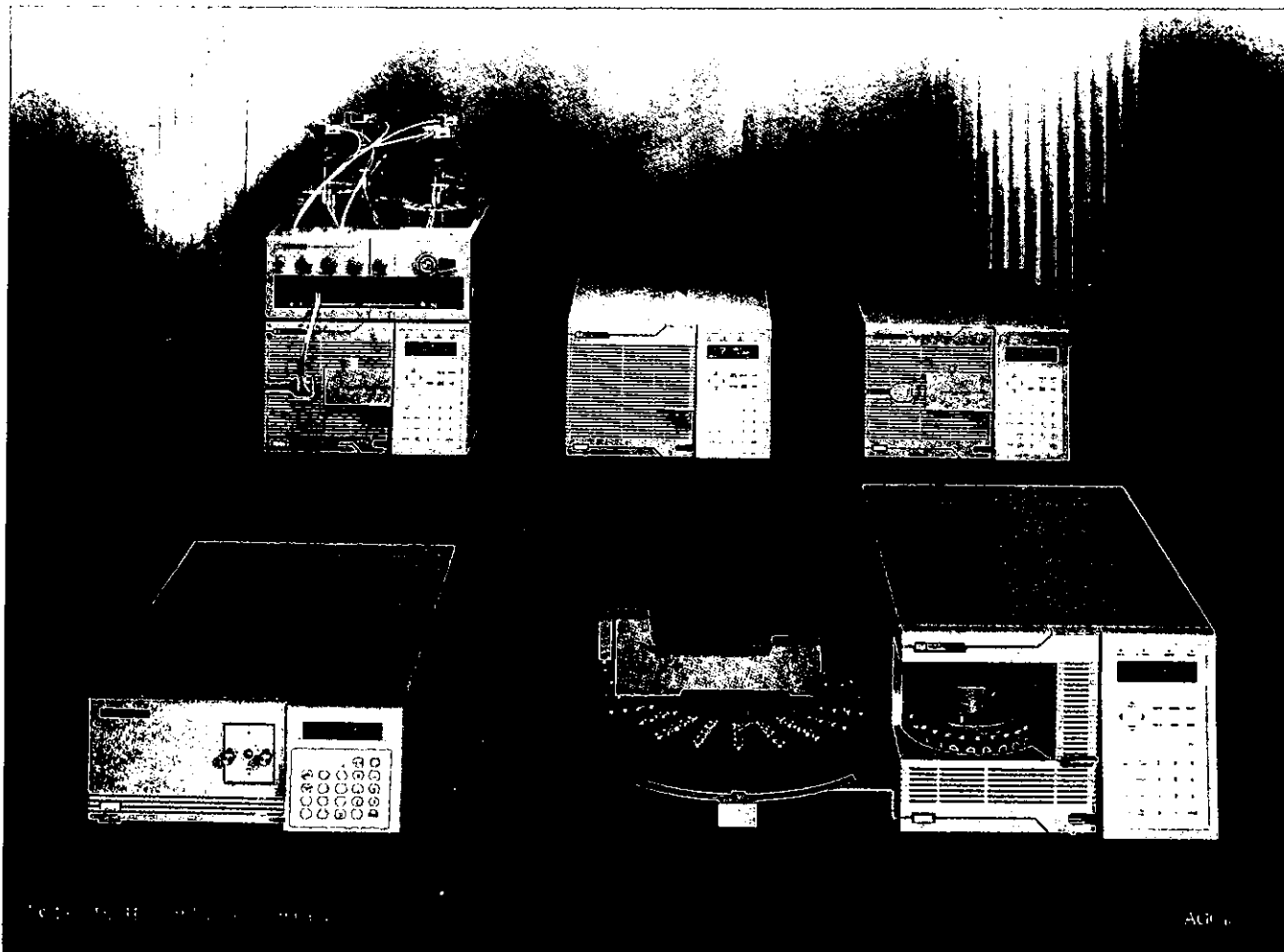
Boost productivity with superior performance and uptime

The advanced HP 1050 Series gives you the sensitivity, accuracy and precision you need. What's more, it gives you superb results without the usual hassles. That's because each module was designed to eliminate most set-up, running and maintenance problems. And built-in self diagnostics virtually eliminate wasted or lost samples.

Furthermore, the HP 1050 Series makes trouble shooting, repair and parts exchange extremely easy. Add to that inherent HP quality and reliability — not to mention HP's excellent support — and downtime becomes almost nonexistent. In fact, reliability is so high, we're even offering a 99 percent uptime guarantee.

Let HP inject new life into your lab

To learn more about the outstanding HP 1050 Series, or other HP advances in analytical chemistry, contact your nearest Northrop office.



northrop
INSTRUMENTS & SYSTEMS LIMITED

The name for precision

WELLINGTON PO Box 2406 Phone: 856-658
AUCKLAND Private Bag, Newmarket Phone: 794-091
CHRISTCHURCH PO Box 8388 Phone: 795-360

hp HEWLETT
PACKARD

131 JOHN YOLLAND & ASSOCIATES LTD
P.O. Box 51-411, Pakuranga, Auckland
Phone 569-807

Consulting chemical and environmental engineers, project managers, feasibility studies.

132 CARL ZEISS PTY LTD
22-24 Emily Place, 6th Floor,
4 Seasons Plaza, Auckland. Phone 31-116

The Terrace, 4th Floor, Phone 724-860
Mayfair Chambers, Wellington
Importer and wholesaler of scientific instruments and optical equipment.

133 XL CONSULTANTS
164A Beach Rd, Campbells Bay, Auckland 10
Phone 410-7710

We consult and advise only. No analytical work is done.

134 ANALYTICAL RESEARCH LABORATORIES
2 Swan St, Napier
Phone 356-807

Analytical chemistry, mainly in agricultural area and downstream processed products.

135 APPLIED GEOLOGY ASSOCIATES LTD
Greenpark Bldg, Cnr Greenlane & Manukau Rds
P.O. Box 26-075, Auckland. Phone (09) 602-804.
Telex NZ63211. Fax (09) 609-454

98-102 Abel Smith Street, Wellington Phone (04) 846-145
Telex NZ31642, Fax (04) 844-290

A privately owned and fully independent mining consultancy established in 1974. Now employing twenty specialist professional staff on projects in New Zealand, Australia and in the Asia-Pacific region.

136 ASSOCIATED PROCESS CONTROLS LTD
P.O. Box 13-492, Onehunga, Auckland 6
Unit 4/18 Clark St, New Lynn, Auckland.
Phone 876-001. Fax 877-897. Telex NZ63523.

Specialists in gas detection and gas analysis for environmental safety and process control. Also supply process analysers.

137 AUCKLAND DAIRY LABORATORY (MAF)
131 Boundary Rd, Blockhouse Bay 7
P.O. Box 41, Auckland. Phone 676-026

The Auckland Dairy Laboratory is part of the Ministry of Agriculture and Fisheries. The laboratory provides a comprehensive analytical service covering all foods and food additives.

138 BEHRING DIAGNOSTICS : HOECHST NZ LTD
P.O. Box 67, Auckland.
Phone 578-068. Fax 579-511. Telex 2338.

Christchurch Phone 385-222
Established supplier of Diagnostic Reagents. Filtration specialists.

139 CARINA CHEMICAL LABORATORIES LTD
P.O. Box 30-366, Lower Hutt
Phone (04) 662-753

An independent Research and Development company, specialising in developing new products, processes etc, and assisting with or participating in the development of businesses based on such chemical products.

140 CERAMIC ENGINEERING LTD
99 The Mall, Onehunga
P.O. Box 59063, Mangere Bridge
Phone 665-251

Manufacturers of technical and refractory ceramics, special refractories, fused silica crucibles, zircon crucibles, electrical ceramics.

141 CHEMBY MARKETING LTD
P.O. Box 5641, Auckland
Phone 762-127

P.O. Box 30-148, Lower Hutt Phone 666-048
P.O. Box 1598, Christchurch Phone 388-403

Importers and distribution of industrial raw materials, primarily chemicals and plastics.

C 142 CHEMICAL PLANT LTD
13 Patiki Road, Avondale Auckland.
Phone 886-054

Designers and Plastic Fabricators. Manufacturers of 'Smoothflow' fume cabinets, 'Fumellow' centrifugal fans, complete ducting systems, tanks, vessels, and custom fabrication.

A 143 CHEMISTRY DIVISION DSIR
Private Bag, Petone, New Zealand
Phone (04) 666-919. Fax (04) 694-500

Mt Albert Res Centre, Phone (09) 893-660. Fax (09) 86-333
Box 2224 Auckland
Geothermal Res Centre,
Private Bag, Taupo Phone (074) 48-211. Fax (074) 48-508
Ilam Research Centre,
Box 29-181, Christchurch Phone (03) 516-019. Fax (03) 51-992
N.Z.'s largest chemical laboratory — facilities to carry out research and development work in virtually any field of chemistry.

C 144 COATINGS TECHNOLOGY LTD
387 Hillsborough Road, Auckland 4
Phone 676-140

Consultants covering surface coatings and industrial sealants.

D 146 CROPPER, HARCROS
119 Carbine Rd, Mt Wellington, Auckland 6.
P.O. Box 62-005, Sylvia Park, Auckland 6
Phone 276-9680

Wool House, Brandon St., Wellington Phone 739-569
467 Selwyn St, Christchurch
P.O. Box 4275, Christchurch Phone 67-547

Supplier of commodities, chemicals and chemical specialty products for Agricultural, industrial, food and veterinary.

BD 147 DEAK INTERNATIONAL (NZ) LTD
74-76 Upper Queen St, Auckland
P.O. Box 6322, Auckland

25 Albert St, Greymouth Phone (027) 4518
Precious metal refiners.

C 148 DIVISION OF HORTICULTURE AND PROCESSING DSIR
Private Bag, Auckland
Phone 893-660

Basic and Applied horticultural research laboratory.

C 149 ENVIROLAB SERVICES LTD
P.O. Box 9437, Auckland 1
Phone 544-721

Envirolab Services Ltd offers an analytical and consulting laboratory service for water, wastewater and air pollution.

D 150 GAMLEN CHEMICAL CO
54 Leonard Rd, Mt Wellington, Auckland
P.O. Box 14258, Panmure
Phone (09) 592-799 Fax (09) 595-790

Manufacturer of water treatment chemicals and equipment including demineralisers and softeners. Blenders of industrial cleaning chemicals and fuel treatments.

C 151 GCNZ CONSULTANTS LTD
10-14 New North Rd, Eden Tce Auckland
Phone 399-477

57 High St, Lower Hutt Phone 692-166
Environmental engineers and scientists specialising in solid and liquid waste management and disposal, soil and water contamination assessment and clean-up, and risk measurement and management plans for hazardous substances.

C 152 GEOLOGY DEPT, UNIVERSITY OF CANTERBURY
University of Canterbury, Christchurch.
Phone 482-009

Geology consultants.

ABF



Special Gases

TRADITIONAL SUPPLIERS OF:
HIGH TECHNOLOGY PRODUCTS INCLUDING
GASES

Calibration Standards
Zero Grade
Instrument Grade
Certified Grade
Ultra High Purity
Research Purity
Liquid Helium
Mixed Gases

EQUIPMENT

Matheson Regulators
Flowmeters
Leak Detection
Flash Back Arrestors
Control Valves
Mass Flow Controllers
Mixing Systems
Purification Filters

COMPLETE ANALYTICAL SERVICES
INCLUDING SAMPLE TESTING

AUCKLAND: PH 599-139 MR SKINNER
WELLINGTON: PH 684-249 SPECIAL GASES
CHRISTCHURCH: PH 487-199 MR CARTER

HIGH PURITY GASES FROM NZIG

With the increasing demand on instrumentation to meet today's high technological requirements the need for high purity gases has become critical.

NZIG Special Gases has met that challenge; by introducing a new range of gases to meet the demands of the analyst by guaranteeing the specification of the high purity gases used in today's "high tech" laboratory instruments.

NZIG Special Gases supplies Instrument and Zero Grade gases. These locally produced gases are supplemented by the full range of imported gases.

Instrument and Zero Grade gases are identified by the pale blue shoulder in addition to the standard colours. Manufacture is under strict laboratory control.

Instrument Grade Gas:-

Batch filled into evacuated cylinders and kept in a dedicated Instrument Grade pool.

One cylinder of each batch is fully analysed to ensure that any impurities are below 10PPM.

A label stating batch number and minimum purity is attached to each cylinder.

Zero Grade Gases:-

Essentially similar to Instru-

ment Grade Gas, but each individual cylinder is analysed and a certificate is issued.

Specifications for Zero Grade Gas are higher than Instrument Grade — impurities less than 5PPM.

Gases for GC:-

The most commonly overlooked component of Gas Chromatographic and other instrument systems is the carrier gases. Gas chromatographs can be equipped with a variety of detectors, each of which requires its own series of carrier gases.

Helium is the preferred carrier Gas for G.C., and routine analytical procedures can be performed using Instrument Grade Helium (99.995%) or Ultra High Purity (99.9999%).

When operating flame ionisation detectors, organic compounds must be eliminated from the system, thus the use for the grade of gases designated Zero Grade.

Zero Grade is a special gas designation for gases contain-

ing certified low levels of hydrocarbons, oxygen or other contaminants. Component-specific analysers, such as non-dispersive infrared instruments, also require a gas not to contain the component in question, ie; Zero gas for a carbon monoxide analyser might be nitrogen certified to have less than 1 PPM CO.

As well as G.C. work, several other applications also stand out as candidates for high purity gases.

Atomic Absorption Instruments use Instrument Grades of Nitrous Oxide, Air and Acetylene. Instrument Grade acetylene is guaranteed not to "prime" acetone into delicate AA Instruments.

Food Applications: Instrument Grade Gases such as nitrogen and CO₂ are preferred for Gas packaging applications and because of guaranteed low levels of O₂ and no risk of other impurities contaminating the cylinders.

Modified atmospheres, incubators and gas inerting application also use Instrument and Zero Grade gases.

The use of High purity gases will also increase the life of inline gas filters in any system.

Another important aspect

that should be considered when using high purity gases is the type of reticulation system used, as outgassing from delivery system components can significantly affect the overall results. Your nearest NZIG special gases expert can help advise you in this area as well as answering the following questions which you should bear in mind when using high purity gases.

Do the materials that are in contact with the gas stream have high outgassing rates?

Will the absorption of oxygen and water to system components affect analysis results?

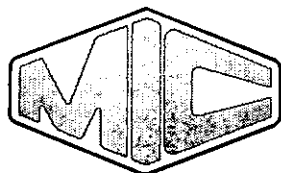
Does the component design contribute to gas stream contamination?

How many sources of contaminants are there in a gas delivery system?

How can the effects of these contaminants be minimised?

NZIG Special Gases has also met this challenge by stocking a wide range of customised high purity gas reticulation equipment such as metal diaphragm regulators, filters, flowmeters, valves etc.

For further information please contact your local branch of NZIG, as listed in this directory.



METALLURGICAL & INDUSTRIAL CONSULTANTS LTD

- * Failure Investigation — on-site inspections (plant, machinery, vessels, pipework and transport)
- * Materials Advisory Service
- * Corrosion Monitoring
- * Non-Destructive Testing
- * Mechanical Testing
- * Heat Treatment

Wellington Office:

3rd Floor, Williams & Adams Building
72-82 Taranaki Street, PO Box 2346

Laboratory & Workshop:

123 Rimu Road, Paraparaumu

TELEPHONE (04) 858-422
TELEX NZ30083 FAX (04) 852961

CHEMICAL ANALYSIS ?

CONTACT:

P.O. Box 989
NAPIER.
Ph 356 807

Analytical
Research
Laboratories
Limited

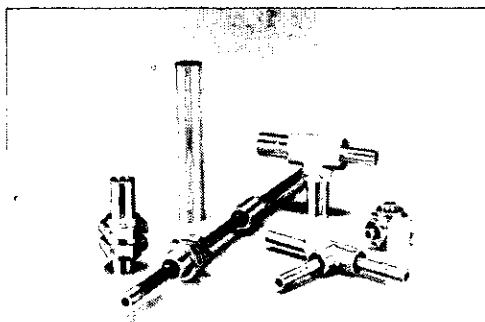
FOR

- Food Analysis
- Effluents
- Nutrient solutions
- Wine Analysis
- Consultancy
- Plant Tissue
- Soils
- Waters
- Fertilizers
- Pesticide residues

A **TELARC** registered Laboratory

Member NZ Association of Consulting Laboratories

COAXIAL WELD FITTINGS PROVIDE DOUBLE CONTAINMENT OF HAZARDOUS FLUIDS



Coaxial weld fittings, for connecting 1/4" process lines and 1/2" secondary containment lines in coaxial tubing systems, are now available from CAJON Company, Macedonia, Ohio.

The fittings increase safety in systems handling toxic, pyrophoric or corrosive fluids. They also connect coaxial tubing in temperature control systems, where the space between the tubes carries heating or cooling fluid.

The 316L stainless steel fittings can be welded with conventional TIG or automatic orbital tube welding equipment. Butt weld ends assure high purity welds.

Fitting style determines pressure rating -- terminator and bulkhead terminator: 3500 psi; coaxial sleeve: 1600 psi; coaxial tee: 5100 psi on 1/4" process line, 1900 psi on 1/2" containment line.

The new fittings can be combined with conventional weld fittings to solve numerous unique coaxial plumbing problems.

AUCKLAND VALVE & FITTING CO. LTD.

Unit 7, 26 Ryan Place, Manukau City, Auckland.
P.O. Box 97687, South Auckland Mail Centre. Phone (09) 278-6164.
After Hours (09) 535-5814. Telex NZ2833. Fax No: (09) 277-9069.



CHEMISTRY DIVISION

The Expert chemical Problem Solvers

Tel (04) 666919
Fax (04) 694500

Private Bag
Petone

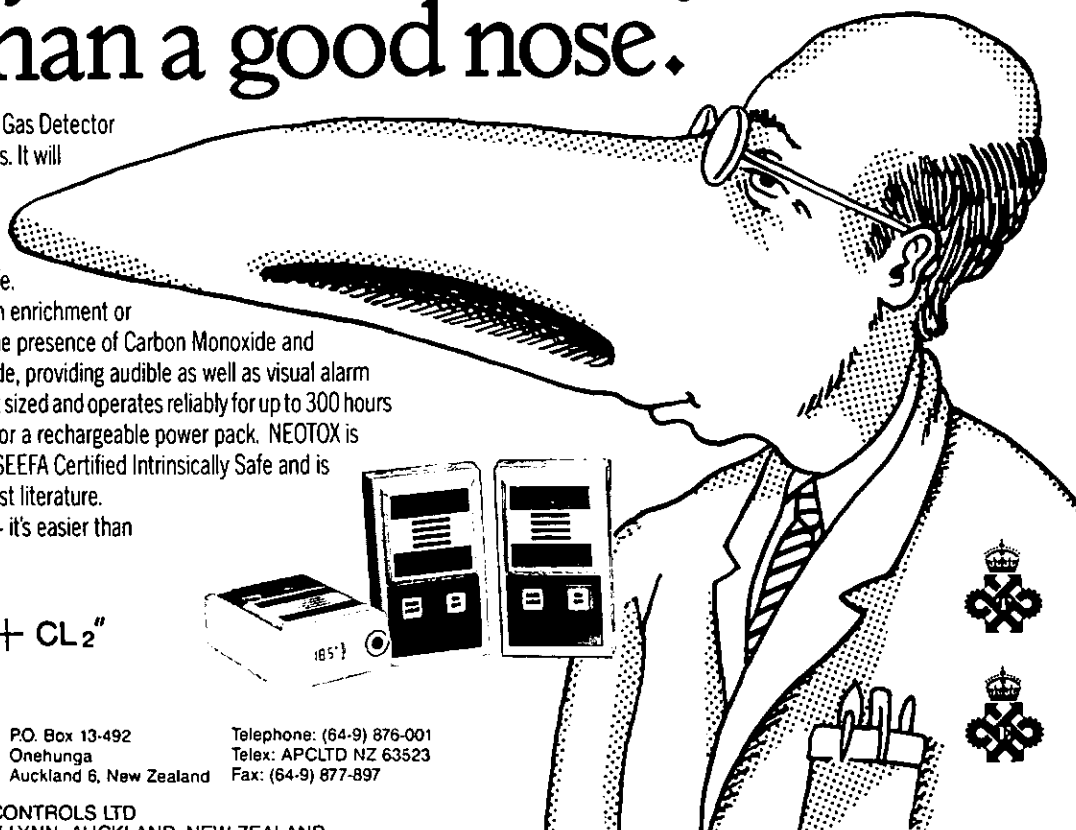
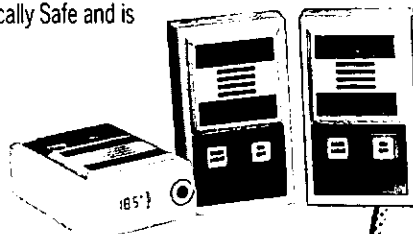
When your life is at risk you need more than a good nose.

NEOTOX is a tiny Portable Gas Detector with enormous capabilities. It will detect harmful gases long before they become dangerous, keeping you and your environment safe.

NEOTOX monitors Oxygen enrichment or deficiency, responds to the presence of Carbon Monoxide and detects Hydrogen Sulphide, providing audible as well as visual alarm signals. NEOTOX is pocket sized and operates reliably for up to 300 hours standard dry cell battery or a rechargeable power pack. NEOTOX is tough, economic and BASEEFA Certified Intrinsically Safe and is described fully in our latest literature.

Send for your copy now - it's easier than growing a special nose.

"NOW SO₂ + CL₂"



APC

P.O. Box 13-492
Onehunga
Auckland 6, New Zealand

Telephone: (64-9) 876-001
Telex: APCLTD NZ 63523
Fax: (64-9) 877-897

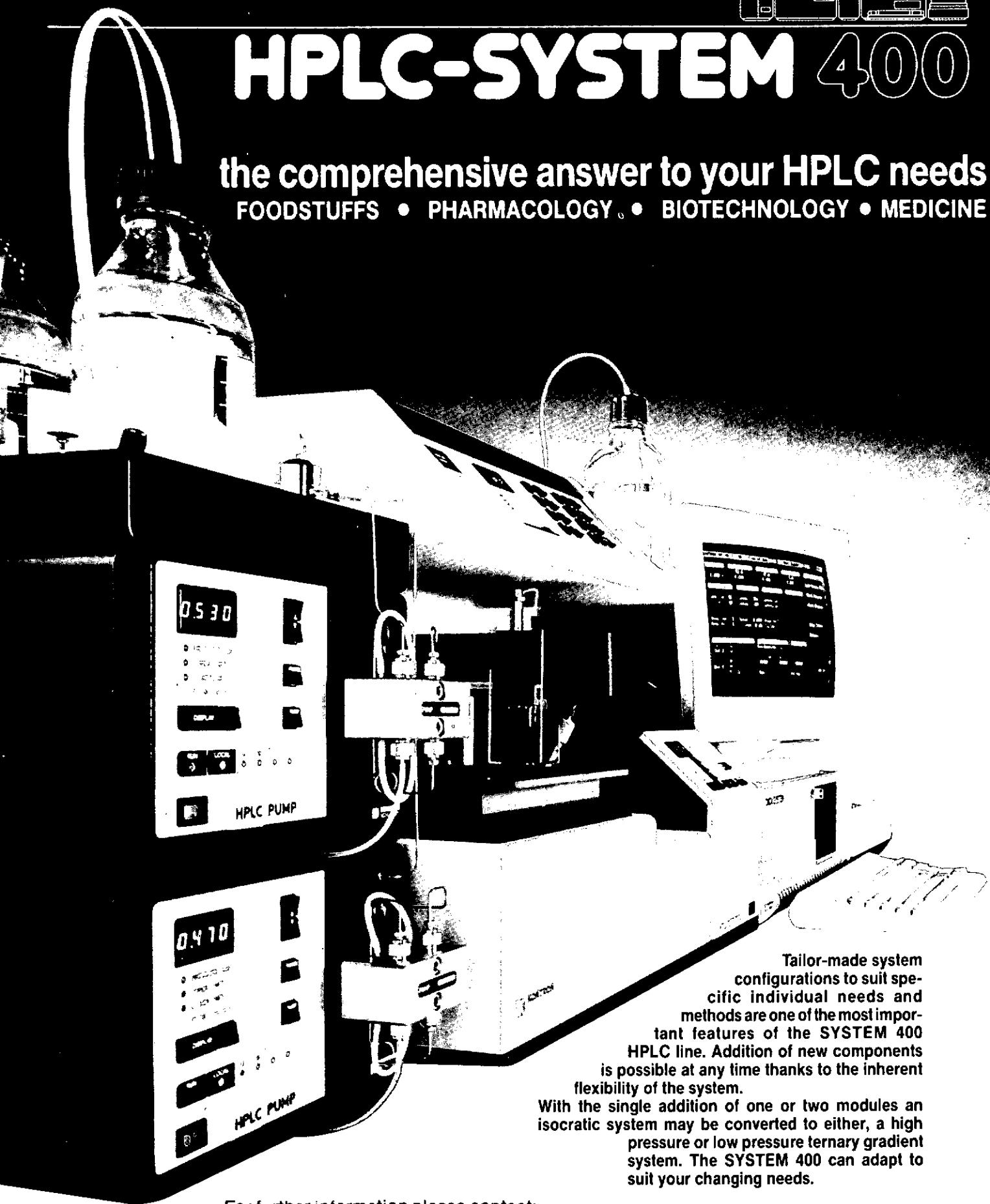
ASSOCIATED PROCESS CONTROLS LTD
4/18 CLARK STREET, NEW LYNN, AUCKLAND, NEW ZEALAND.

- 153 W.R. GRACE (NZ) LIMITED** **D**
Private Bag, Porirua, Wellington
Phone 376-069
P.O. Box 17-177, Greenlane, Auckland Phone 591-324
P.O. Box 48, Christchurch Phone 61-883
A manufacturer and importer of specialist chemical products for use in agriculture water treatment and many other areas of industry.
- 154 HAMILTON ANALYTICAL LABORATORY** **C**
P.O. Box 4136, Hamilton East
Phone 395-143 Fax 393-590
- 155 HAMILTON MEDICAL LABORATORIES** **C**
P.O. Box 52, Hamilton
Phone 82-599
- 156 R.J. HILL LABORATORIES** **C**
P.O. Box 4048, Hamilton East
Phone 80-277
Commercial laboratory specialising in soil, plant and water analysis.
- 157 HORTICULTURAL RESEARCH LABORATORIES** **C**
P.O. Box 63-097, Papatoetoe South, Auckland
Phone 274-8873
- 158 INTERMED SCIENTIFIC LTD** **B**
P.O. Box 33-268, Takapuna, Auckland
Phone 444-2586
Distributors to chemical pathology, research laboratories and institutes of diagnostic kits, reagents and consumable plastics and associated equipment.
- 159 LABSUPPLY PIERCE NZ LTD** **ABD**
165 Sunnybrae Rd, Auckland 10
Phone (09) 419-2551 Fax (09) 444-7314
32 Sheffield Cres, Christchurch Phone (03) 587-410
148 Kings Cres, Lower Hutt Phone (04) 697-196
A laboratory supply house with comprehensive glassware and reagents available on an ex stock basis. A general selection of basic laboratory instrumentation available.
- 160 MED-CHEM LTD** **D**
5th Floor Augustus House,
15 Augustus Tce Parnell Auckland
P.O. Box 37400, Parnell
Phone (09) 774-932 Fax (09) 394-545
Formed with the break up of Stauffer Chemical Co (NZ) Ltd following Stauffers worldwide acquisition by ICI of the United Kingdom. Importing and distributing general chemicals particularly food and technical grade phosphates, several grades of industrial and agricultural sulphurs and B.P. and Technical grades of Magnesium Sulphate. Also medical equipment.
- 161 METALLURGICAL AND INDUSTRIAL CONSULTANTS LTD** **C**
72-82 Taranaki St, Wellington
P.O. Box 2346
Phone 858-422
Metallurgical consultancy, failure analysis, materials advisory service, metallography, heat treatment mechanical testing and non destructive testing.
- 162 METALLURGICAL SERVICES LTD** **C**
P.O. Box 44, Drury
Phone (09) 294-8437, (09) 294-8431
Optical Emission spectragraphic analysis of all ferrous metals, copper and aluminium alloys. Also metallographic examination and reporting.
- 163 MOSS INDUSTRIES LTD** **C**
P.O. Box 19-000, Avondale, Auckland
Phone (09) 817-8698
Independent private company providing a variety of services based on many years of broad experience.
- 164 NECAL (DEPT OF HEALTH)** **C**
2 Edenvale Rd, Mt Eden, Auckland 3
Phone 601-747 Fax 609-619
A multidisciplinary group of chemists, physicists and engineers, providing services in the areas of air pollution, occupational health, hazardous waste disposal, combustion engineering, noise monitoring, and testing, calibration and servicing of audiometric and sound measuring equipment, and gas analysis.
- 165 NIRO ATOMIZER (NZ) LIMITED** **F**
2 Onslow Ave, Epsom, Auckland, New Zealand
Phone 608-159 Fax 606-678
Niro Atomizer (NZ) Ltd manufactures spray dryers, fluid bed dryers and evaporators. These are successfully used in the chemical, ceramic, polymer, food and pharmaceutical industries.
- 166** **N.Z.C.C.**
See No. 96
- 167 NEW ZEALAND HYDROPONICS LTD** **CDE**
P.O. Box 949,
769 Cameron Road, Tauranga
Phone (075) 80849. Fax (075) 80847.
Accent Hydroponics,
87 Marigold St, Revesby, NSW Phone 772-3666
Zero Grass (NZ) Ltd
P.O. Box 949, Tauranga Phone (075) 80849
Service and supply company to horticulture, especially to hydroponic growers. Manufacturers of electronic equipment. pH and conductivity meters, thermostats, automated control equipment.
- 168 NZ SOIL BUREAU, DSIR** **C**
Eastern Hutt Road, Taita
Private Bag, Lower Hutt
Phone (04) 673-119
NZSB, DSIR, C/- Ruakura Agric. Res. Centre, East St.,
Private Bag, Hamilton Phone (071) 62-839
NZSB, DSIR, C/- Forest Research Inst., Whakarewarewa,
Private Bag, Rotorua Phone (073) 475-899
NZSB, DSIR, 198 Courtenay Street,
P.O. Box 4043, New Plymouth East Phone (067) 80-385
- 169 NEW ZEALAND STEEL LTD** **C**
Private Bag, Auckland 1
Phone 758-999
- 170 PACIFIC ANALYTICAL LTD** **C**
407 Grey St, Hamilton East
P.O. Box 4266. Phone 68-766
Consultancy involved with technical/scientific personnel placement, computer/edp consultancy (real time systems for laboratories), general laboratory consultancy. Offering staff training/evaluation, technical report/preparation, computer consumables.
- 171 PHARM CHEM RESEARCH LABORATORIES LTD** **CD**
P.O. Box 5313, Dunedin, New Zealand
Phone NZ (024) 777-967
Analysis; Physical Measurements; Chemical Syntheses; Research; Literature Searches.
- 172 RHONE POULENC NZ LIMITED** **D**
P.O. Box 35-060, Naenae, Wellington
Phone 678-629
Subsidiary of Rhone Poulenc UK — Importers of laboratory chemicals.
- 173 ROSEMOUNT INSTRUMENTS LIMITED** **E**
48A Diana Drive, Glenfield, Auckland 10
Phone 444-1646
196 St Asaph Street, Christchurch Phone (03) 657-610
Rosemount Instruments Ltd is part of Rosemount Inc., USA and is responsible for promotion and support of the group instrumentation and systems installed in NZ.



HPLC-SYSTEM 400

the comprehensive answer to your HPLC needs
FOODSTUFFS • PHARMACOLOGY • BIOTECHNOLOGY • MEDICINE



Tailor-made system configurations to suit specific individual needs and methods are one of the most important features of the SYSTEM 400 HPLC line. Addition of new components is possible at any time thanks to the inherent flexibility of the system.

With the single addition of one or two modules an isocratic system may be converted to either, a high pressure or low pressure ternary gradient system. The SYSTEM 400 can adapt to suit your changing needs.

For further information please contact:

Kontron Instruments
A Roche Company
Innovative Technology
Realistic Prices



Roche Products (NZ) Ltd
P.O. Box 12-492
Penrose, Auckland
Ph. 640-029

174 SCHOOL OF PHARMACY, C.I.T. **C**
Central Institute of Technology,
Private Bag, Trentham, Upper Hutt, Wellington
Phone 277-089

Expertise in pharmaceutical chemistry, pharmaceuticals, pharmacology.

175 SCOTT ELECTRONICS **DF**
2 Gossamer Drive, Pakuranga, Auckland, NZ
Phone 563-78

176 SHANAHAN SCIENTIFIC SERVICES **C**
P.O. Box 49-048, Mt Roskill, Auckland 4
Phone 673-149

177 SORENSON LABORATORIES LTD
P.O. Box 43-122, Mangere, Auckland
Phone 275-1459

178 TOLEDO SCALE **A**
(Division of Reliance Electric (NZ) Ltd)
44 Walls Road, Penrose, Auckland
P.O. Box 12-016, Penrose, Auckland
Phone 80277

Agents:

Weighing Machine Services Ltd, P.O. Box 1193 Whangarei	Phone 773-431
Electro Weight Ltd, P.O. Box 5231, Frankton, Hamilton	Phone 74-304
Automation & Electronics (NZ) Ltd, P.O. Box 1049, Tauranga	Phone 87-881
Taranaki Scale Services Ltd, 11 Pukekohatu St, Waitara	Phone 6247
Jepsen Electronics Ltd, P.O. Box 1904, Palmerston North	Phone 77-539
Byers Engineering Ltd, 102 Quarantine Rd, Nelson	Phone 76-159
Toltec Scale Ltd, P.O. Box 7248, Sydenham, Christchurch	Phone: 65-800
Colin Shaw Scale Services Ltd, P.O. Box 136, Timaru	Phone 88-689
Fletcher Electronics Ltd, P.O. Box 1093, Dunedin	Phone 771-193

*Scale company manufacturing and importing weighing equipment,
including toploading electronic laboratory scales.*

179 TOWER BIOLOGICALS LTD **C**
P.O. Box 25-091, Christchurch
Phone 50-624

180 WATER SYSTEMS A Division Of **CF**
Contamination Control Ltd
46 Lunn Aven, Mt Wellington
P.O. Box 14-621, Panmure, Auckland 6
Phone 579-135

Concerned with design, manufacture and sale of water treatment systems from large industrial plants to domestic applications plus specialized high grade water applications.

181 NATIONAL AGLAB **C**
188 Collingwood St, Hamilton
Phone 80-599

Analytical laboratory specialising in plant tissue, soil nutrients, and surface waters for domestic and agricultural users.

182 FOUR SHIPS SCIENTIFIC **A**
56 Ngahere St, Stokes Valley
P.O. Box 37-067, Wellington
Phone (04) 638-285. Fax (04) 638-285

Fourteen years experience in sales and service of Kratos mass spectrometers and surface analysis equipment.

SPECIAL NOTICE NZIC MEMBERS

Chemistry in New Zealand is your magazine and needs your support.

If every member gave us 30 minutes of his time once a year we could do much more with your journal
and save you money.

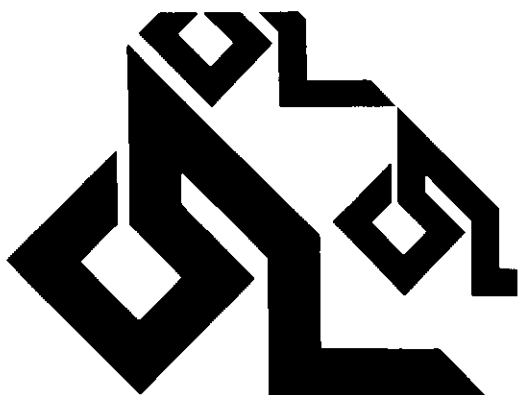
HERE'S HOW.

Talk to your employer. Show him your copy and suggest he use the magazine to advertise — remember *Chemistry in New Zealand* is read by some of the most influential decision makers in our industry not to mention Government Departments, Education and Research organisations.

Advertisements placed by this means will be of direct benefit to NZIC funds.

If you are the Decision Maker in your organisation make the decision to support the NZIC *now* and advertise in *Chemistry in New Zealand.*

Please contact your
branch secretary
for details.



CHEMICAL SERVICE LABORATORIES

Established 1907

Analytical and consulting chemists in the fields of industry, manufacturing, sport, law, insurance and local government.

Chemical Service Laboratories (1985) Limited

3 Hardy Street, PO Box 13-033,
Johnsonville, Wellington, New Zealand.
Telephone: (04) 787-039 or 787-402

Member NZ Association of Consulting Laboratories

MAF Lynfield

The Auckland Dairy Laboratory is one member of a network of laboratories operated by the Ministry of Agriculture & Fisheries. The laboratory is able to provide a comprehensive analytical service covering all foods and food additives.

The range of analytical services includes:

Compositional analysis

Food and drinks are analysed for components such as protein, fat, ash, carbohydrates and moisture.

Nutritional analysis

Items such as infant formula, milkpowders, special diets and dietary supplements are analysed for vitamins, amino acids, trace elements and minerals.

Microbial assessment

The detection and identification of a wide range of micro-organisms including pathogens are carried out in a wide range of drinks and foods.

Chemical Contaminants

The presence of pesticides, heavy metals, antibiotics, nitrate and nitrite.

Instrumental analysis

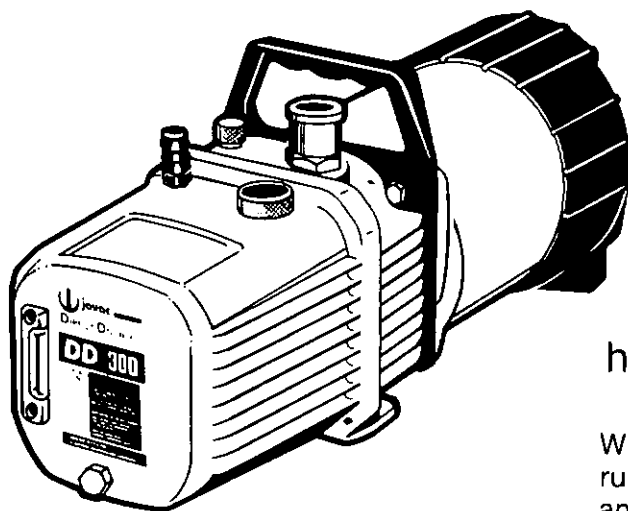
The laboratory operates a well equipped laboratory offering GLC, HPLC, Atomic Absorption and many other techniques.

The Auckland Dairy Laboratory is modern, well equipped and TELARC registered to offer a comprehensive and confidential service at competitive rates.

For further information contact:

Dr Don Mossop — MAF Lynfield
PO Box 41, Auckland. Phone (09) 676-026

javac high vacuum pumps



**FULL SERVICE
BACK UP**

**An
investment
in
reliability**

hour after hour, day after day

When you invest in Javac you buy reliable running with absolutely minimum maintenance, and full back up service if it is needed. Day after day Javac keep running — a good investment.

Capacities up to 300 litres/min.
Ultimate vacuum to 5×10^{-4} torr

LEVINGSTON BROS LTD

1 Beasley Avenue, Penrose, Auckland 5. Telephone (09) 592-714. Telex NZ 60676. Fax (09) 591-196. PO Box 12-549, Auckland.

LANCER 823

SECTION A CONT.

pH/mV meters

Anritsu	38
Beckman	7
CHK	38
Corning	73
Crison	93
EIL	81
Exttech	38, 56
Fisher	117
Foxboro	56
Gondo	89
Hach	130
Horiba	136
Hanna	7, 80
Jesco	95
Kane May	89
Meiji	117
Metrohm	130
Orion	129
Philips	5, 102
Portec	62
Presto-tek	99
Radiometer	129
Rotronic	38
Schott Gerate	99, 159
Solomat	80
Solstat	80, 159
Suntex	93, 117
TOA	71
Toyo	25
Triac	112
TPS	7
WPA	94

Electrodes

(glass, Pt, reference)

Anritsu	38
Beckman	7
Broadley James	80
CHK	38
Cole Parmer	112
Corning	73
Crison	93
Foxboro	56
Hanna	7
Ionode	7
Ingold	93, 117
Jesco	95
Kane May	89
Metrohm	130
Orion	129
Philips	5, 102
Portec	62
Presto-tek	99
Radiometer	129
Russell	117
Schott Gerate	80, 99, 112, 159
Seibold	99
Solomat	80
TOA	71
Wescan	5
WPA	94

Polarographs

Chemtronics	117
ECO Instruments Ltd	117
EG & G Princeton Applied Research	7
Europa Scientific	7
Gilson	93
Metrohm	130

PARTICLE COUNTERS

Kratel	77
--------	----

PARTICLE SIZE

ANALYSERS

Shimadzu	18
----------	----

SPECTROSCOPY

Visible

Bausch and Lomb	112
Beckman	7
R A Bell	22
Cam-Spec	93
Cecil	99
Dr Lange	93
Hach	130
Helena	112
Hellige	7
Hitachi	7
Jasco	117
LKB	117
Perkin-Elmer	117
Pye Unicam-Philips	102
Seres	95
Sequoia Turner	80, 94, 130, 159
Shimadzu	18
Varian	130
WPA	94

UV — visible

Bausch and Lomb	112
Beckman	7
Cam-Spec	93
Cecil	99
GBC	2
Hach	130
Hellige	7
Hitachi	7
Hewlett-Packard	99
Jasco	129
LKB	117
NEC Sanei	62
Perkin Elmer	117
Pye Unicam-Philips	102
Seres	95
Sequoia Turner	80, 94, 130
Shimadzu	18
Uvikon	110
Varian	130

Infrared

Anarad	99
Barnes i.r. accessories	2
Beckman	7
Bruker	117
Carver i.r. accessories	93
Chino	7, 99
Dickey-John	129
Digilab	130
Foss	129
Foxboro Miran	56
Hewlett Packard	99
Hitachi	7
Infraalyzer	124
Jasco	129
Mattson Inst.	2
Miran	56
NEC Sanei	62
Nicolet	129
Perkin-Elmer	117
Pye Unicam-Philips	102
Seres	95
Shimadzu	18

Fluorimeters

Baird	130
-------	-----

Hitachi	7	Philips	102
Jasco	129	Shimadzu	18
Kontron	110	VG Group	2
Perkin-Elmer	117		
Pye Unicam-Philips	102		
Sequoia Turner	80, 94, 129, 130, 159		

Shimadzu	18
SLM-Aminco	129

Hollow Cathode Lamps

Cathodean	7, 18
IL	117
Juniper	73, 80, 117
Perkin-Elmer	117
Photron	2
Pye Unicam-Philips	102
Simadzu	18
S&J Juniper	117
Varian	130

Arc/Spark Spectrographs

Baird	130
Jobin-Yvon	7
Labtest-Labtam	2
Philips	102
Shimadzu	18

NMR

Bruker	117
Hitachi	7
Nicolet	129
Oxford-Newport	2
Sentec	7
Varian	130

Flame Photometers

Corning	73
Dr Lange	93
Gallenkamp	112
GBC	2
IL	117
Perkin-Elmer	117
Radiometer	129
Seres	95

Inductively Coupled

Plasma Spectrophotometers

Baird	130
Hitachi	7
IL	117
Jobin-Yvon	7
Labtest-Labtam	2
Perkin-Elmer	117
Philips	102
Sciex	99
Shimadzu	18

Atomic Absorption

Spectrometers

GBC Scientific Equipment	2
Hitachi	7
IL	117
Perkin-Elmer	117
Pye Unicam-Philips	102
Scintrex	99
Shimadzu	18
Varian	130

XRD, XRF

Dapple Systems	7
EG and G Ortec	7
Enraf Nonius	117
HNU	136
Kevelex	18
Nicolet	129
Oxford	2

MASS

SPECTROMETERS

Airspec	73
Finnigan	130
Hewlett Packard	99
Hitachi	7
Kratos	182
Leybold	83
Nicolet	129
Perkin Elmer	117
Sciex	99
Shhimadzu	18
VG Analytical	2
VG Gas Analysis	2
VG Isogas	2
VG Isotopes	2
VG Masslab	2
VG Quadruples	2
VG Tritech	2

MICROSCOPES

American Optical	130
Carton	25, 159
Gem-data	38
Hitachi	7
Kyowa	130
Leitz	99
Meijs-Labax	7
Nikon	129
Ogawa	38
Olympus	73
Prior	130
Reichert	130
Swift	112
Toyo	7
Union	130
Wild	99
Zeiss	132

SURFACE

ANALYSERS

Kratos	182
Shimadzu	2
VG	2

THERMAL ANALYSIS

Mettler	129
Netsch	93
Parr	93
Perkin-Elmer	117
Setaram	117
Shimadzu	18
Stanton-Redcroft	117

X-RAY AND

RADIOCHEMISTRY

Radiochemical Equipment

Beckman	7
Canberra	130
ESI-Panax	117
Kemble	22
Kontron	110
LKB	117
NE Technology	117
Nuclear Enterprises	117
The Nucleus	7
Packard	130
Pharmacia LKB	117
Philips	102
Raytest	7

SECTION B — LABORATORY EQUIPMENT

Bench Surfaces

Benchline	103
Colorith	103
Corning	112
Eurotech	3
High-Tech	75
Polybench	142
Whatman	112, 159

Burners

Analita	112
Assistent	94
Bochem	93
Gallenkamp	129
Lancer	89
Parco	116
R&L	80, 94, 112, 159
Samco	94

Clamps, Stands, Bossheads

Assistent	94
Bochem	93
Gallenkamp	129
Helix	80
Parco	116
R&L	80, 94, 112, 159
Samco	94

Crucibles

Bochem	159
Engelhard	80, 147
Gallenkamp	129
Haldenwanger	80, 93
Johnson Mathey	79
Nickel Electro	112
Rocklabs	111
Royal	
Worcester	116
Silica	94, 140
Staatliche	92, 94, 112
Thermal	
Syndicate	80, 112
WD Quartz	93
Zircon	140

Desiccators

Ashworth	11
Azlon	112
Belart	80, 94
Gallenkamp	129
Glaswerk	
Wertheim	80, 159
Jencons	112
Kimble	94
Nalgene	129
Pyrex	112
Sanko Plastic	94
Schott	93

Filter Media

Airpure	51
AMF Duno	84
Difco	58

Gelman Sciences

Inc.	61
Millipore	112
Nalgene	129
Nupro Frits & Filters	15
Sartorius	89
Schleicher & Schuell	138
Toyo	25
Viledon	77
Whatman	80, 94, 112, 159
Zetaplus	84
Zetapor	84

Fume

Cupboards

Captair	80
Erlab	80
Euroform-Corion	22
High Tech	75
Maskell	86
Plasfab	103
Smoothflow	142
Thermoplastic	112, 126

Gas Regulators

Matheson	97
Vultrex	74

Glassware

Bilbate	94
Cope	80
Duran	80
Emil	112
Exelo	61, 94
Fortuna	159
Gallenkamp	129
Glaswerk	
Weltheim	159
Herenz	116
Jencons	112
Kimble	94, 116
Morbank	80
Pyrex	94, 112
Quickfit	112
Samco	80
Schott	
Glasswerke	159
Schott Jaener	80
Springham	112
Superior	89
Volac	112
Wheaton	112

Heating Mantles

Electrothermal	80, 93, 112, 116
Gerhardt	94
Isopad	94, 129, 159

Hot Plates

Chiltern	112
Clayson	94

Franz Morat	89
Gerhardt	94
Heidolph	129
IKA Werk	80, 93
Schott Gerate	159
Sybron	
Thermolyne	159
Techmatic	61

Laboratory Furnaces

Astro	93
Carbolite	88, 129
Despatch	77
Furnace	
Components	140
Gallenkamp	129
Gerhardt	94
Hot Pack	93
Lindberg	93
McGregor	88, 112
Sybron	
Thermolyne	159

Laboratory Furniture

Benchline	3
Gallenkamp	129
Palsfab	103

Laminar Flow Equipment

Airpure	51, 112
Maskell	86

Mills

Alpine	84
Elger	38
Falling Number	129
Franz Morat	89
Fritsch	80, 93
Fryma	84
H. Wedag	93
IKA Werk	80, 93
Pascall	93
Quadro	84
Rocklabs	111

Ovens

Abichem	38
BYK	38
Clayson	80, 94
Contherm	112
Gallenkamp	129
Hotpack	93
McGregor	88
Qualtex	129
Sanyo	80
Thermoline	93

Plasticware

Assistent	94
Axlon	112
Bel-art	80, 94, 116
Beral	112
Bunzl	158

Cole Parmer	112
Difco	58
Disposable	
Plastics	112
Disposable	
Products	80, 158
Elkay	89
Falcon	112
Filtrona	80
Gibco	61
Helena	112
Kayline	80
Kartell	159
Lancer	89
Membrane Filter	
Holder	84
Nalgene	116, 129
Nunc	61
Parafilm	112
Petri	94
Rheepak	109
Sanko Plastic	94
Vitri	80, 116

Pipettes (auto)

Brand	129
Coster	61
Eppendorf	80
Finn	159
Gilson	93
Hamilton	129
Labsystems	159
Lancer	89
Nichiryo	80
Shimadzu	18

Safety Glasses

J T Baker	93
Nalgene	129
UV Products	129
VWR	116

Sieves

Abbey	38
Endecotts	
80, 93, 94, 112, 129	
Engelhard	147
Fritsch	93
Gilson Screen	93
Tyler	93
VWR	116

Spatulas

Astell	94
Bochem	159
Engelhard	147
Gallenkamp	129
Nickel	
Electro	80, 112
Parco	116
Samco	94, 112
Sarstedt	93

Stirrers

Caframo	159
Chiltern	112
Cole Parmer	112
Engelhard	147
Franz Morat	89
GFL	89
Heidolph	129
IKA Werk	80, 93
PMC	93
Sybron	159
Techmatic	61
Toyo	25

Thermometers

Ammerel	93, 159
Anritsu	38

B & H	38
Brannan	99, 112
BYK	38
Chino	99
CHK	38
Cole Parmer	112
Contherm	112
Crison	93
Eirelec	99
Haake	129
Heidolph	129
Parco	116
Phoenix	116
Poulsen	112
Self & Lee	112
Solmat	80
T.C.A.	94
Teltherm	99
Triac	112
Zeal	80, 93, 94, 112, 116, 129, 159

Tongs, Test-tube Holders

Assistent	94
Bel-art	80
Bochem	93
Engelhard	147
Gallenkamp	129
Nickel	
Electro	80, 112
Parco	116
R & L	80, 94, 112
Samco	112

Vacuum Pumps

Alcatel	15, 93
Brand	80
Charles Austen	83
Cole Parmer	112
Dynavac	73
Edwards	130
Javac	83
Leybold-Heraeus	
83, 99, 117	
Mallinckrodt	116
Sartorius	89
Savant	159
Shimadzu	117
Toyo	25

Valves & Fittings

Alcatel	93
Cajon	15
Sartorius	89
Snotrik	15
Straub	74
Swagelock	15
Whitey Nupro	15

Water Baths —

Thermo- regulators

B. Braun	80
Clayson	94
Contherm	112, 159
Gerhardt	94
GFL	89
Grant	112
Haake	129
Heidolph	129
Heto	159
IKA	93
Julabo	61
Lauda	132
Neslab	129
Techne	93, 129



**Leading the way in
analysis and testing**

Specialists in:

- Gold and noble metals analysis
- Geochem analysis
- Environmental analysis
- Forensic analysis
- Pesticide and Herbicide analysis

Agents for:

Seismic Supply International

Telephone:

(09) 597-265

Unit M, 657 Great South Road, Penrose, Auckland.

P.O. Box 17198, Greenlane, Auckland.

Telephone: (09) 597-265 – Fax: (09) 599-630



A member of the INCHCAPE Group

MEMBER OF NZ ASSOCIATION OF CONSULTING LABORATORIES



**HIGH PURITY WATER SYSTEMS FOR ALL
LABORATORY AND PROCESS
APPLICATIONS**

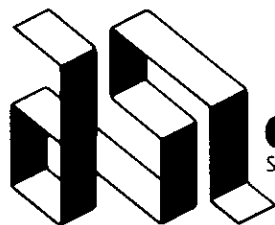
- Central, underbench or cabinet mounted systems supplying multiple work stations.
- Modular concept offering microfiltration and UV sterilisation
- Water flow rates to 20l/min, pressure to 60 psi.

**LABORATORY ANALYTICAL SERVICES
SPECIALISING IN WATER QUALITY AND
TREATMENT.**

58 Sir William Avenue
East Tamaki
Auckland
New Zealand

P.O. Box 63-097
Papatoetoe South
Telephone: 274-5336
Telex: NZ 60550 Rocklab

MEMBER OF NZ ASSOCIATION OF CONSULTING LABORATORIES



CAMBRIDGE
Soil, Plant & Water Analysis

★ *Specialising in agricultural and horticultural analyses
for crop nutrition.*

★ *Offering a comprehensive testing programme
with rapid sample turnaround.*

★ *For prompt analysis of:*

— *SOILS — PLANT TISSUE — POTTING MEDIA —*
— *WATERS — FERTILISERS —*
— *NUTRIENT SOLUTIONS —*

85 Queen Street, Cambridge. Phone (07) 274-409. Fax (071) 274-495.

TELARC

This laboratory is registered by the Testing Laboratory Registration Council of New Zealand

Member of the New Zealand Association of Consulting Laboratories

NEW ZEALAND ASSOCIATION OF CONSULTING LABORATORIES

The New Zealand Association of Consulting Laboratories is a recent addition to the New Zealand consultants' scene. With a current membership of twenty-seven laboratories, the Association arose out of a need to front up to issues of common concern to its various members, and in particular the effects of the Government user-pays policy on competition in the consulting field.

The current members of the Association are as follows. Details on most of these or-

ganisations or individuals can be found elsewhere in this Directory.

Alpha Biologicals Ltd

Analytical Research Laboratories

Analytical Services Ltd

Aqua Treatment Ltd

Allan Aspell & Associates Ltd

Cawthron Institute

Chemical Service Laboratories Ltd

P J Dawson Laboratories

Dr Elizabeth Ebbett

Envirolab Services Ltd

Flinders Cook Technical Services

W Grayson & Associates Ltd

Hamilton Analytical Laboratory

Hamilton Medical Laboratories

R J Hill Laboratories

Horticultural Research Laboratories

Metallurgical Services Ltd

Metallurgical & Industrial Consultants

Mooyman & Hornby Laboratories

NZ Hydroponics Ltd

Pacific Analytical Ltd

Scientific & General Consultants Ltd

Scientific Analytical Ltd

Shanahan Scientific Services

Sorenson Laboratories Ltd

Tasmex Laboratories

Tower Biologicals Ltd

Members of the Association are bound by the following...

CODE OF ETHICS

1. Every member of NZ Association of Consulting Laboratories shall uphold and promote the dignity, standing and reputation of all members of the association and shall conform to the following principles of professional conduct.
2. A member shall not knowingly engage in illegal work, or co-operate with those who are so engaged, and shall refrain from associating with or allowing the use of their name in connection with any enterprise of a questionable character.
3. A member shall act in a spirit of personal helpfulness and fraternity toward other members of his profession.
4. A member shall act in a strict spirit of fairness to clients, and, if, in his opinion, work requested of him by clients seems to present improbability of successful results, he shall so advise the clients before undertaking the work.
5. A member shall be conservative in all estimates, reports, testimony etc., and especially so if these are in connection with the promotion of a business enterprise.
6. A member shall not accept compensations, financial or otherwise, from more than one interested party without the consent of all parties involved. A member is, however, in no way debarred from accepting employment from more than one client providing there is no conflict of interests.
7. A member shall not use any unfair, improper or questionable methods of securing professional work or advancement, and shall decline to pay or receive secret commissions. He may use all honourable means in competition to secure professional employment but shall not by unfair means injure, directly or indirectly, the professional reputation, prospects or business of a fellow member.
8. A member shall not attempt to compete with another practitioner on the basis of professional charges, by reducing his usual charges in order to underbid, after having been informed of the charges already named by that practitioner.
9. A member shall, as far as possible, fix fees at a point high enough to ensure complete and adequate service, since unreasonably low charges tend towards inferior or unreliable work. In fixing fees it is proper for a member to consider:
 - 9.1 The time, labour and capital involved. The novelty and difficulty of the matter, and the experience necessary.
 - 9.2 Whether the employment precludes other employment in similar lines or will involve the loss of other business while engaging in the particular work.
 - 9.3 Benefit resulting to the client from the service.
 - 9.4 The character of the employment: whether from a casual or from a constant and established client.

SECTION C — CONSULTANTS

1 Abels Ltd

Oil and fat analysis. Instrumentation: GLC, AA, wide-band nmr, uv-vis.

6 Alpha Biologicals Ltd

Telarc registered for the microbiological testing of foods, cosmetics, waters, sewage, effluent and trade wastes. Microbiological quality (including sterility) of veterinary preparations. Plant hygiene evaluation. Instrumentation: Laminar flow cabinet, microscopes, incubators, analytical balances, centrifuge, water baths, pH meter, Seward Stomacher, freeze drier, membrane filtration equipment etc.

9 Analabs

Geochemical analysers including fire assay. Water analysis, coal and peat analysis. Pharmaceutical, veterinary and agricultural product analysis. Industrial trouble shooting. Arson investigations and blood alcohol analysis. Instrumentation: AAS x 2, accessories including Hg vapour and continuous hydride apparatus, uv-vis, GC with FID and ECD and computing integrator, radial compression HPLC with variable wavelength UV detector and computing integrator. Automatic calorimeter, adiabatic calorimeter, proximate analyser, high temperature ultimate analyser, US Bureau of Mines Fischer assay apparatus for fuel reserve evaluation.

11 ASL Cambridge (Analytical Services Ltd)

elements of nutritional interest, fertilizers, foodstuffs, nutrient solutions, potting mixes and water for horticultural and domestic use. Telarc registered for soil, plant, potting mix and nutrient solutions. Instrumentation: AAS, uv-vis.

12 Allan Aspell & Associates Ltd

Chemical and microbiological analysis (environmental and industrial). Chemical consultants. Product development. Laboratory chemicals. Water and effluent treatment. Instrumentation: AAS, uv-vis (scanning), fluorimeter (scanning), furnace, pH and ion selective electrodes, conductivity meter, GC (FID, EC, NP), integrator, incubators.

13 Auckland Industrial Development Division

Consulting services in the fields of quality control and quality assurance. Metallography, mechanical testing of metals alloys and plastics, corrosion testing. Failure analysis, metallurgical examinations and investigations, contract research and development work for industry, manufacturers and government.

24 Betz New Zealand

Engineering service programmes for water and process systems.

28 G. Buchan Water Treatment

Water treatment plant design and equipment sizing, potable, effluent, sewage.

32 Cawthron Institute

Food and beverage analyses, microbiological and biological testing, water quality and trade wastes, trace elements, wood and forestry industries, fishing industry, pesticide residues and formulations, soils, solid fuel burners, consumer products environmental consulting. Instrumentation: AAS (3x), GC (5x) with FID, ECD, FP, TCD, i.r., uv-vis, total organic carbon, HPLC (2x), flame photometer, Kjeldahl, freeze drier, incubators, microscopes, centrifuges (3x), scintillation counter, ATP photometer, laminar flow cabinet.

35 Chemical Service Laboratories (1985) Ltd

General analytical services including most instrumental techniques. Plant, animal product, water, metal drug analyses including evidential blood alcohol analysis. Formulation and product development, process development and quality assurance. Industrial and domestic bacteriology, including plate counts, culturing and identification of organisms. Instrumentation: uv-vis, IR, GC, HPLC, AAS.

39 Chemtest Laboratories

Analytical services for water, soils and plant tissues. Instrumentation: AAS, visible spectroscopy.

43 David E. Cooper

Analysis and treatment of water and waste water, air pollution and control. General laboratory apparatus, refractometer universal measuring bridge, automatic sampler, timing switchgear, 6 gang stirrer, specific ion meter, conductivity meter, ORP flowthrough sensor, transmitter recorder, turbidimeter, B.O.D. manometric, pilot and bench scale plant.

44 P.J. Dawson Laboratories Ltd

Analysis of pesticides and mycotoxins, amino acids and vitamins. General industrial consulting. Instrumentation: GLC (with FID, EC and N-P detectors), HPLC (variable uv), uv-vis.

51 Email Industries

Contamination control laboratory. On site certification by Telarc certified personnel for all types of laminar flow work stations.

55 Farmers Fertiliser Ltd

The services of the laboratory (Telarc registered) is available for the analysis of fertiliser, acids and sulphates. (Laboratories at Whangarei, Otahuhu, Morrinsville and New Plymouth.)

57 Flinders Cook (Technical Services) Ltd

General analyses of solvents, oils, fuels, pharmaceuticals, foodstuffs, blood alcohols, solvent residues, food oils, plastics and monomers etc. Instrumentation: GLC (with integrator), AAS, infra-red, uv-vis,

HPLC, Karl Fischer, pH, selective ion, refractometers, Brookfield viscometers.

58 Fort Richard Laboratories Ltd

Microbiological consultancy.

60 Geochemistry (VUW)

Geochemistry. Mineral characteristics and identification, analysis, mineral reactions, utilisation and processing. Petroleum geochemistry, organic and sediments. Instrumentation: x-ray diffraction, x-ray fluorescence, Mossbauer spectroscopy, electron microscopy, AAS.

63 W. Grayson & Associates Ltd

Routinely undertake analyses of adhesives, agricultural chemicals, compressed gases, detergents, disinfectants, food chemicals, metals and alloys, pharmaceuticals, polymers, solvents, surfactants, water treatment chemicals, water, soil, wood (CCA treated), geochemical analyses, food, dairy products, microbiological tests, hygiene of industrial plant and equipment, ceramicware testing, forensic investigations, plastics consultants. Instrumentation: 3 x GLC, 4 x HPLC, uv-vis, ir, furnaces, balances, incubators, autoclave, microscopes, stomacher, Laminar flow cabinet, auto Kjeldahl system, Karl Fischer apparatus, polarimeter, refractometer, flash-point apparatus, air drying ovens, vacuum ovens, viscometers, muffle furnace, centrifuges, Perkin Elmer mercury analyser, 3 x AAS with vapour accessories and a wide selection of AAS lamps.

67 Hazards Analysis Ltd

Assessment of dust explosion, vapour explosion and toxicity hazards in the workplace, use of HAZAN and HAZOP safety analysis. Instrumentation: particle size and moisture content determination, flammable and toxic vapour measurements.

68 Healing Industries Ltd.

Consultancy and advice in electroplating, anodising and phosphating.

74 Independent Service Laboratories

Chemicals analysis with industrial applications. Geochemical analysis with respect to mining/exporation work including sampling, onsite work and particle sizing. Consultants to ready mix concrete producers in supplying expertise and staff to enable plants to comply with NZS 3104/3112/3121 statistical analyses of strength tests results by computer. Expertise in contract research projects. All results reporting is computerised.

77 Ipsco

Telarc certified to carry out HEPA and clean room testing. Particle counting, cold d.o.p. photometers.

78 Ivon Watkins Dow

Low level organics analysis. Identification and quantification using GC/MS. Contract manufacture and pilot scale development. Instrumentation: GC/MS, GC, HPLC. Also, all types of process equipment.

92 Mooyman and Hornby Laboratories Ltd.

Water, soil and plant analyses. Instrumentation: AA, uv-vis, flame photometer.

97 NZ Industrial Gases Ltd

Sampling and analysis of gases. Leak detection, system purity checks. Preparation and analysis of gas mixtures. Sourcing special gases for supply to laboratories and industry. Instrumentation: GC with FID, TC and ultrasonic detectors. IR with gas cell. Trace oxygen meters. High capacity, high accuracy balances. Sampling cylinders.

103 Plasfab Installations 1977 Ltd

Design and/or consultancy for laboratory fume cupboards, exhausts and associated equipment.

105 Portals New Zealand Ltd

Chemical analysis of waters and effluents. Instrumentation: AAS, uv-vis, pH, conductivity, nephelometry, filtration.

106 Processed Chemicals Industries Ltd

Analyses of water, soils and plant materials. Advice on water purification.

113 Scientific Analytical Ltd

Analyses of soil, herbage, water, trace elements, food and processed foodstuffs, household and industrial products, manufactured goods. Instrumentation: AAS x 2; flame, hydride, GFA, uv-vis, balances, pH meter, ion selective electrodes, muffle furnace, Kjeldahl, Karl-Fischer, amperometric and potentiometric titrations, conductivity.

114 Scientific & General Consultants Ltd

Chemical analysis of food, animal byproducts, oils (food and mineral), cosmetics and toiletries, fertilizers and pharmaceuticals. Industrial processes, insurance loss adjustment. Bacteriological services. Instrumentation: uv-vis, GLC, AAS, Karl Fischer, potentiometric amperometric titrations etc. Viscometry — Brookfield and u-tube, salt spray cabinet for accelerated corrosion testing.

115 Scientific Service Laboratories Ltd

Design of small scale chemical plant such as pilot or semi-scale plants in glass. Neutralisation of acidic waste.

121 Stevens Chem Industries Ltd
Microbiological and chemical analysis. Instrumentation: HPLC, GLC, ir, uv.

125 TELARC

Consultancy, education, and accreditation services in all aspects of quality assurance, laboratory testing and industrial design.

131 John Yolland & Associates Ltd

Chemical engineering process and plant design, commissioning, feasibility studies, environmental and biotechnology projects. Independent product evaluation and testing.

133 XL Consultants

Consultancy advice in the fields of bulk chemical handling, manufacturing and compounding, personnel selection, lecturing on scientific topics.

134 Analytical Research Laboratories

Soil, water, foliage analyses. Food chemistry, pesticide residue analyses, plus product development in agricultural areas. Instrumentation: HPLC, GLC, AA, uv-vis.

135 Applied Geology Associates

Mineral exploration, mine and quarry design, mineral processing design, economic analysis and environmental management consulting services. Project management services.

137 Auckland Dairy Laboratory

The laboratory provides a comprehensive analytical service covering all foods, food additives and pharmaceuticals. The range of analyses covers compositional, nutritional, microbiological, trace

139 Carina Laboratories

Properties and failures of industrial materials, including adhesives, dyes, detergents, polymers, surface coatings, etc. Design of processes, development of new processes and products, advice on project development, marketing, finance, all other aspects of new chemical business. Instrumentation: general laboratory, GC, IR.

140 Chemistry Division, DSIR

Analytical services in paint, plastics, oils, ceramics, minerals, food, pharmaceuticals, water, effluents, geothermal fluids — almost anything chemical. Consultancy in laboratory staff training. Instrumentation includes AA, XRD, GC/MS, HPLC, ICP, NMR, ESR, and general lab. techniques.

144 Coatings Technology Ltd

Investigation of surface coating problems, services to manufacturers, including formulation and production of surface coatings and sealants. Consultation concerning personnel and industrial relations. Instrumentation: microscopy, photography.

148 Division of Horticulture and Processing, DSIR

Gas chromatography/mass spectrometry, including high resolution selective ion recording. Specialists in handling volatile sub-microgram samples. Instrumentation: VG-70SE double focussing magnetic sector mass spectrometer, capillary GC.

149 Envirolab Services Ltd

The laboratory specialises in all aspects of water science and air monitoring and is able to provide local authorities, industry and private sector clients with a comprehensive range of scientific skills and equipment to advise on water, wastewater and air pollution problems. Facilities are available to study appropriate treatment methods for water and wastewater and to provide chemical analysis of potable waters or effluents. Telarc registered. Emission testing for air pollution control purposes, flue gas measurement, chemical analysis and atmospheric monitoring for occupational health and safety are undertaken. Consulting advice for clean air act licensing is offered. Instrumentation: pH, conductivity, turbidity, specific ion, dissolved oxygen, uv-vis spectrophotometer, IR spectrophotometer, atomic absorption spectrophotometer, air particulate and chemical sampling, oxygen content.

150 GCNZ Consultants Ltd

Soil, air, and water contamination assessment. Environmental impact assessments for industry and mining. Design, assessment, and monitoring of solid and liquid waste disposal and treatment facilities. Hazardous substance site clean-up and management plans.

152 Geology Dept, University of Canterbury

X-ray fluorescence analysis of geological and plant materials. X-ray diffraction identification and analysis of minerals. Instrumentation: Philips PW 1400 XRF spectrometer, Philips PW 1820 XR diffractometer with on line search/match.

156 RJ Hill Laboratories

Soil, plant and water analysis. Environmental analysis. Instrumentation: AAS, including graphite furnace.

Chemistry Yearbook 1988/35

ENVIROLAB

ENVIRONMENTAL LABORATORY AND CONSULTING SERVICE

WATER - WASTEWATER — AIR

CHEMICAL ANALYSIS

- water, wastewater, tradewaste, air
- horticulture, irrigation

FIELD MONITORING

- streams, lakes, waste discharges
- air pollution monitoring and sampling
- long term environmental surveys

LABORATORY TRIALS

- water and wastewater treatment
- coagulation, flocculation, filtration
- biological, anaerobic, aerobic

PILOT PLANT STUDIES

- water, wastewater processes
- on-site trials

AIR POLLUTION

- emission testing, sampling, inspection
- Clean Air Act compliance

ENVIROLAB SERVICES LTD

8-Leek Street, Newmarket, P.O. Box 9437 Auckland 1.
Telephone: (09) 544-721 Fax: (09) 546-502

A TELARC Registered Laboratory
Member NZ Association of Consulting Laboratories

ALACHLOR.
ALDRIN. AMITRAZ.
AMITROLE. ATRAZINE.
AZINPHOS. BISCHLORFENATE.
BITERTANOL. BROMACIL. BROMOXNYL.
BUPIRIMATE. CAPTAFOF. CAPTAN. CARBARYL.
CARBENDAZIM. CARBOFUARH. CHLORDANE. CHLORMESQUAT.
CHLOROFENICIN. CHLOROTHALONIL. CHLORPYRIFOS. 2,4 D. DDT.
DAMINOZIDE. DELTAMETHRIN. DIAZINON. DIGUAT. ENDOSULPHAN. ENDRIN.
DICHLORVOS. DIELDRIN. DIMETHOAT. DIPHOSPHON. LINDANE. MANCOZEB. MCPA.
FENVALERATE. GLYPHOSATE. HEXAZINON. NALÉD. OXYDETHYL METHYL PARATHION.
METALAXYL. METHOMYL. MONJURON. NALÉD. OXYDETHYL METHYL PARATHION.
PHOSMET. PICLORAM. PRIMPHOS. PROPARGITE. SIMAZIN.
THURAM. TRIFORINE. VINILOZOLIN. ZINEP. PERMETHRIN.
THIOPHANATE.

PESTICIDE

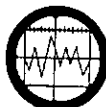
ANALYSIS

IN

Crops, Water, Food

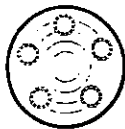
OVER 6 YEARS EXPERIENCE

- CROP SPRAY RESIDUES
- HORMONE DAMAGE ANALYSIS
- CHEMICAL TEST KITS
- ANALYSIS FOR INSURANCE
- DISTRIBUTORS OF LABORATORY WARE



P. J. Dawson Laboratories Ltd
INDUSTRIAL CONSULTING & ANALYSIS

41 PEMBROKE STREET, PO BOX 178, HAMILTON, NEW ZEALAND
TELEPHONE (071) 80-251 - PRIVATE 496-625



Metallurgical Services Ltd.

SPECTROGRAPHIC ANALYSIS SERVICE
PHYSICAL TESTING - ADVISORY SERVICE

Optical Emission Spectrographic
chemical analysis of all —
Ferrous metals, Copper,
Aluminium alloys
24 hour service

We can offer a complete,
experienced consultancy and
advisory service to the metals
industry including problem solving,
scrap investigation, casting design,
material selection, metal forming
and heat-treatment.

Physical Testing and Complete
Heat-Treatment facilities available.

WAIHOEHOE ROAD DRURY
P.O. BOX 44, DRURY, NEW ZEALAND.
PHONE (09) 294-8431; (09) 294-8437

Member NZ Association of Consulting Laboratories

R.J. Hill Laboratories

- * Specialising in the analysis of
 - Environmental samples
 - Soils
 - Plant tissue
 - Waters and Effluents
 - Foodstuffs
- * Analytical techniques include
Graphite Furnace A.A. spectroscopy
for low level metal analysis
- * Telarc Registration pending

*For further information
please contact:*

R.J. Hill Laboratories
P.O. Box 4048, Hamilton.
Telephone (071) 80-277
Fax (071) 80-277

MEMBER OF NEW ZEALAND ASSOCIATION OF CONSULTING LABORATORIES

SECTION C

CONSULTANTS Continued

161 Metallurgical and Industrial Consultants

Metallurgical consultancy, failure
analysis, materials advisory ser-
vice, metallography, heat treat-
ment, mechanical testing and
non-destructive testing.

162 Metallurgical Services Ltd

Optical emission spectrographic
analysis of all ferrous metals, cop-
per, and aluminium alloys. Also
metallographic examination and
reporting. Instrumentation: two
ARL emission spectrographs,
models 15000, 29700.

163 Moss Industries Ltd

Technical advice, computers,
chemistry, forensic, investigation,
insurance losses, industrial,
manufacturing, development, re-
search, formulation.

164 NECAL (Dept of Health)

Laboratory services, consultancy,
and advice in the areas of environ-
mental chemistry and acoustics.
Specialist services in air pollution,
occupational health, noise
monitoring, combustion engineer-
ing, hazardous waste manage-
ment, chemical safety, ventilation
testing, gas analysis, calibration
and maintenance of related in-
strumentation.

167 New Zealand Hydroponics Ltd

Water, soil, leaf, nutrient analyses.
Instrumentation: AA, vis spectro.

168 NZ Soil Bureau, DSIR

Consultants in all areas of soil and
land use. Assessment of potential
for horticulture, cropping, forestry,
housing. Irrigation and drainage,
disposal of waste onto soil,
rehabilitation of disturbed land,
civil engineering. Full laboratory
services including total element
analyses. Field offices throughout
New Zealand. Instrumentation:
XRF, Infra-red, UV-vis, AAS, pH,
LECO furnace for carbon, XRD,
DTA, Microscopes, Viscometers,
Soil Sampling equipment includ-
ing drilling rig. Auto-analysers,
Potentiometric Titrator, GLC, Scin-
tillation Counter, Incubators,
Centrifuges including ultra-
centrifuge. Ion chromatograph,
Mossbauer spectroscope. MTS
Stiff loading frame, range of

geotechnical laboratory equip-
ment, gamma ray scanning equip-
ment for measuring density of soil
cores.

169 New Zealand Steel Ltd

Metals and materials, industry and
mining, agriculture and horticul-
ture, environmental. Instrumenta-
tion: XRF, OES, ICP, AA, LECO
(O,N,C,S), GC, autotitrators, flash
point, viscometer, refractometer,
tensile testers.

170 Pacific Analytical Ltd.

Placement/selection of techni-
cal/scientific staff, computers,
EDP consultancy, staff training
and evaluation, etc.

171 Pharm Chem Research Laboratories Ltd.

Research and development
projects, feasibility studies and
forensic.

174 School of Pharmacy, CIT.

Drug information and general con-
sultancy services in pharmaceuti-
cal science. Analysis and
formulation of drugs, product
development, dissolution and
stability testing, and analysis of
drugs in biological fluids. Most in-
strumental techniques available.

176 Shanahan Scientific Services

Forensic investigations, arson and
other crime scenes examined.
Blood alcohol analyses. Fire
debris analysed for accelerants.
Analytical services to industry.
Microscopy, photomicroscopy. In-
strumentation: pH meter, gas
chromatograph, visible spectro-
photometer, stereo binocular and
compound microscope.

177 Sorenson Laboratories Ltd

Food consultant. Product develop-
ment, microbiological analysis,
process development, feasibility
studies.

180 Water Systems

Designers of ultra-pure water sys-
tems.

181 National Aglab

Soil and plant nutrient testing, fer-
tiliser requirements. Water quality
— mineral levels and microbiol-
ogy. Livestock feed quality. In-
strumentation: AA, vis spectro,
fluorescence, pH, conductivity.

CHEMICAL BRAND NAMES

Abbot	26	J.T. Baker	93
Acidol	19	Balanced	
Acrocril	65	Polymer	24
Acronal	19	Barnstead	150
Acropol	65	Basacid	19
Acticide	38	Basacryl	19
Actif-8	119	Basagran	19
Adogen	26	Basamid	19
Adol	26	Basazol	19
Aduvex	118	Bascal	19
Aerodux	40	BASF Metam	19
Aerolite	40	BASF MH30	19
Aerosil	38	Basfapon	19
Aerosol	95	Basfin	19
Afranil	19	Baso	19
Ajax	8, 112, 119	Basocoli	19
Akaustan	19	Basoflex	19
Akulon	118	Basolan	19
Albac	95	Basonat	19
Albertol	70	Basoplast	19
Albigen	19	Basoprint	19
Alcantex	95	Basosoft	19
Alcomer	38	Bastomol	19
Aldrich	112, 116	Basyntan	19
Aldrul	70	Bayer	20
Alfa	119	BDH 21, 80, 94,	112
Alfloc	31	Beckacite	65
Alftaleat	70	Beckocoat	70
Algane	68	Behring	138
Alicepe	19	Bentone	64
Alkanol	48	Beckopox	70
Alkatreat	105	Beckosol	65, 70
Alkazid	19	Beckothane	65
Allphase	141	Beckurof	70
Alltech	5	Beetle	38
Alox	41	Belclene	40
Alpex	70	Belco	41
Alphacide	95	Belsperse	40
Alpolit	70	Benafos	119
Alresat	70	Berck Spencer	41
Alresen	70	Beta	23
Amax	41	Betasan	119
Amidel	127	Bidsynth	70
Amollan	19	Big Shake Base	119
Amphocerin	123	Bioquat	78, 123
Analar	21	Biosoft	95
Anchor	119	Bioterger	95
Anhydrol	127	BL-60	119
Antara	59	Bladex	118
Antaron	59	Blandofen	59
Antarox	59	Blankit	19
Anthosin	19	Blo	59
Antra Yellow	19	Blockfill	53
Antistatic C	19	Blue Ark	82
Antistatin	19	Blue Circle	41
Applied Science	5	Boehringer	
Appretan	70	Mannheim	112
Aquaclus	119	Bolden	41
Aquicar	127	BP Pryo	119
Araldite	40	Broadside	118
Aramol	19	Brochier	40
Araplex	40	Bronidox	123
Arcutext	53	Bronopol	38
Ardel	127	Bruggolit 'C'	70
Arkon	95	Brybor	27
Anistar	21	Brychlor	27
Arnite	118	Bryclean	27
Arrosolo	119	Brydry	27
Arrow	119	Brykote	27
Arrozan	119	Bryquat	27
Artex	16	Brysan	27
ASA-3	118	Brytab	27
Asahi	41	Brytex	27
Asahi Guard	70	Brywet	27
Asplit	70	Burmol	19
Aspon	119	Butanox	123
Astacin	19	Butofan	19
Asulgan	19	Butoxyl	70
Atlas	119	Butyne	59
Aurantiol	19	Butyrolactone	59
Austin	16		
Aversin	123	Calbiochem	138
Avicel	41	Calgon	95
Avitex	48	Calfrus	19
Avitone	48	Calixin	19
		Canada	
		Sandpapers	29
Bakelite	127, 70		

SECTION D CHEMICALS

Adhesives

8, 19, 20, 23, 26, 27, 36, 40, 41, 46, 48, 59, 64, 65, 68, 70, 108, 122, 123, 141, 153.

Agricultural Chemicals

16, 18, 20, 26, 27, 37, 38, 40, 41, 45, 46, 48, 55, 59, 64, 70, 78, 87, 92, 100, 101, 108, 110, 118, 119, 122, 123, 127, 128, 141, 153, 160, 167.

Catalysts

19, 26, 52, 64, 65, 70, 79, 87, 95, 100, 118, 122, 123, 127.

Compressed Gases

5, 27, 38, 70, 97, 101, 119, 123.

Detergents

19, 20, 26, 27, 33, 34, 36, 37, 38, 40, 41, 45, 48, 59, 64, 68, 78, 80, 87, 89, 90, 91, 92, 112, 116, 118, 119, 121, 122, 123, 127, 141, 159.

Disinfectants

20, 24, 26, 27, 33, 34, 36, 41, 45, 55, 64, 68, 78, 87, 89, 92, 100, 121, 122, 123, 127, 141.

Dyes

19, 20, 27, 40, 41, 70, 92, 110, 116, 123, 141, 159.

Emulsifiers

1, 19, 20, 26, 27, 33, 37, 38, 40, 41, 46, 48, 59, 64, 70, 78, 87, 92, 100, 118, 119, 122, 123, 127, 141.

Food Chemicals

1, 19, 20, 21, 26, 27, 34, 38, 41, 45, 46, 48, 64, 70, 78, 80, 82, 87, 92, 100, 118, 119, 122, 123, 127, 141, 153, 160.

Canning	68
Caradate	118
Caradol	118
Carbitol	127
Carborundum	29
Carbowax	127
Carboxide	127
Cardura	118
Cariflex	118
Carroll Scientific	41
Carrybon	141
Cartrex	91
Caskade	68
Castrol	30
Catomance	41
Cavco	123
CCL-30M	34
CCL-C3	34
Cearex	118
Ceca	26
Cederan	
Celkaphos	19
Celatam	90
Celite	95
Cellestren	19
Celliton	19
Cellogen	38

Laboratory Chemicals

5, 8, 12, 20, 21, 46, 54, 58, 68, 70, 80, 87, 89, 92, 93, 94, 100, 112, 115, 116, 139, 150, 159, 171, 172.

Metals and Alloys

26, 27, 38, 52, 64, 70, 78, 79, 83, 87, 92, 100, 122, 123, 127, 141.

Pharmaceuticals

19, 26, 27, 38, 40, 41, 46, 48, 59, 70, 78, 87, 92, 98, 100, 104, 110, 116, 121, 122, 123, 128, 171.

Pigments

19, 20, 21, 26, 27, 33, 38, 40, 48, 64, 70, 90, 96, 100, 104, 122, 123, 141.

Polymers

4, 19, 20, 23, 26, 27, 38, 40, 46, 47, 48, 59, 64, 65, 70, 78, 87, 92, 93, 100, 104, 108, 118, 122, 123, 127, 141.

Solvents

19, 20, 23, 26, 27, 29, 36, 48, 59, 64, 68, 70, 78, 80, 87, 89, 91, 100, 116, 118, 119, 122, 123, 127, 141, 159, 172.

Surface Coatings

8, 16, 19, 20, 26, 27, 30, 36, 37, 40, 46, 47, 53, 64, 68, 70, 83, 87, 100, 108, 118, 119, 123, 127, 153.

Surfactants

19, 20, 26, 27, 33, 37, 38, 40, 41, 46, 48, 56, 64, 70, 78, 87, 92, 100, 104, 118, 119, 121, 122, 123, 127, 141.

Water Treatment

19, 20, 24, 26, 27, 30, 31, 34, 38, 40, 41, 45, 46, 48, 55, 64, 68, 70, 78, 87, 92, 100, 105, 106, 119, 122, 123, 127, 141, 150, 153, 160.

Cellon	64
Cellosize	127
Cellosolve	127
Celogen	38
Centrol	95
Cerac	83
Cereplast	19
Ceroxin	123
Ceswid	70
Cetamoll	19
Cetiol	123
Cheelox	59
Chefade	1
Chemical	
Specialities	36
Chemiquim	95
Chem-metal	33
Chemspec	36
Chevalline	53
Chimassorb	40
Chlorothene VG	123
Chlorothene	78
Chocothin	123
CHP	59
Chroma	116
Chromasol V	70
Chromitan	19

CHEMICAL BRAND NAMES

Citowet	19	Donut-Pyro	119
Clearfas	100	Double-F	55
Clearglaze	53	Dover	26
Cobox	19	Dow Corning	8, 46
Colanyl	70	Dowfax	123
Collacral	19	Dowcide	123
Colourglaze	53	Dowicils	123
Comperlan	123	Dowlax	78
Condensol	19	Dri-Sil	46
Conker	68	Duasyn	70
Convof	21	Duoco	47
Cooltreat	105	Dulon	47
Coriagen	70	Dulux	47
Corial	19	Duoquat	78
Corolase	19	Duponol	48
Corrogen	24	Duranate	38
Corr-Shield	34	Durferrit	38
Corrol	24	Durophen	70
Cottestren	19	Duroxyn	70
Coumalux	118	Dutrex	118
Coverall	53	Dyfonate	119
Covercyl	53	Dygal	90
Covortex	53	Dynasil	64
Cremophor	19	Dynasytan	64
Cropolamid	64		
Crown	119	Ecocodeco	119
Crystex	119	Edenol	123
Crystic	108	Eeelslip	146
Cumar	64	Eganal	70
Curafos	119	Egg Match	119
Curasol	70	Elastolve	123
Curavis	119	Elastoflex	19
Custom Clean	24	Elastollan	19
Custom Sperse	24	Elastopur	19
Culina	123	Elco	41
Cyanamid	95, 105	Electran	21
Cyosorb	95	Elephant	95
Cymel	95	Ellexar	118
Cytocel	19	Elvace	65
		Emu Powder	19
		Emulan	19
D-C Tron	19	Emulfluid	123
Dabco	95	Emulphor	19
Dalamar	95	Emulpul	123
Davisil	5	Emulsion A/S	41
Dawes	41	Emulsogen	70
Dayglo	19	Emultex	108
Deanox	141	Emultop	123
Dearborn	153	Ence Laquer	19
Decaltal	19	Enceprint	19
Decrolin	19	Englehard	52
Deflavit	19	Envoy	118
Degomma	19	Epiceroms	123
Dehycont	123	Epikote	118
Dehydag	123	Epikure	118
Dehydol	123	Epikuron	123
Dehyquart	123	Epilink	118
Dehyton	123	Epon	118
Dekol	19	Epotuf	65
Deplastol	123	Eptam	119
DER	78	Equus	53
Derake	78	Eradicane	
Derminol	70	Super	119
Desford	68	Erganil	19
Desical	26	Erhaaruit	19
Devrinol	119	Eropic	19
Dewanil	19	Etch EL	34
Dextrofin	110	Ethocel	78, 123
Dexx	53	Ethylan	141
Dezann	26	Ethylen	19
Di-Tab	119	Eteingal	19
Diamin	64	Eudragt	19
Diamond-S	119	Eukesol	19
Dianodic II	24	Eukesolar	19
Diazinon	118	Eulytin	19
Diazopone	19	Euperlan	123
Dicalite	123	Eureddure	70
Dicamba	118	Eurelon	70
Dieldrite	118	Eurepox	70
Difco	58	Euresyst	70
Diofan	19	Eusapon	19
Dioxitol	118	Eutanol	123
Disperse	19	Evinyol	19
Dispex	38	Evuprint	19
Disponil	123	Export Linkers	90
Diversy	45, 80	Expyrol	70
Dobane	118	Extracover	53
Dobanol	118	Extrapones	123

SECTION D

CHEMICAL BRAND NAMES CONTINUED

Fabriglide	8, 46	HEP	59	Korantin	19	Luron	19	Mowiton	70	Paliotan	19
Fanal	19	Herbigation	119	Koreforte	19	Lurotex	19	MP	75	Paliotol	19
Farmac	54	Hercér	118	Korsin	19	Lusantin	19	MPA	64	Pallinal	19
Fastacrome	90	Hesoalkyd	108	Koretak	19	Lusynton	19	MSS "C"	119	Pallitop	19
Fastisol	19	Hesothane	108	Kraton	118	Lutan	19	Mucigel	41	Palusol	19
FB Pigment	33	Heubach	95	Kremelta	1	Lutavit	19	Mulogophen	59	Paperad	95
Fenafix	59	Heucodur	100	Krolor	95, 100	Lutensit	19	Multrex	91	PCL	123
Fenopon	59	Heucoiron	100	Kromal	90	Lutensol	19	Mycoaid	90	Pegasol	91
Ferromel	95	Hi-Sorb	119	Kronos	64	Lutexal	19	N-rich	101	Pellan	123
Ferrosperse	24	Hodag	41	Krytox	48	Lutofan	19	Nalco	31	Pelluit	19
Fetrimon	19	Hordaflex	70	Kunstsharsfabriek	26	Lutonal	19	Nalco Delta-T	31	Penalyn	65
Finaprop	38	Hordalub	70	Kurofan	19	Lutrol	19	Nalcoag	31	Penwalt	68
Finathene	38	Hostaflex	70	Kuroplast	19	Luvillex	19	Nalcote	31	Per/Lac	119
Firelite	27	Hostafan	70	Kynar	123	Luviset	19	Nalfleet	31	Perapret	19
Fireprep	31	Hostalux	70	L-K	119	Lufiskol	19	Nalgun	31	Percol	38
Fireside	31	Hostapal	70	Labomca	85	Luvisoft	19	Nalrom	31	Peregol	19
Fixapret	19	Hostapern	70	Lanco SI	119	Luwipal	19	Nappalan	123	Perenol	123
Flexo	19	Hostaprint	70	Lanestren	19	Luxanthol	19	Naprex	91	Perfection	119
Flexol	127	Hostapur	70	Larodur	19	M-C-Thin	123	Natsyn	95	Perk	119
Flexonyl	70	Hostasin	70	Laroflex	19	M-Pyrol	59	Naugatuck	38	Permacol	24
Flexx	53	Hostasol	70	Laromin	19	MAAC	110	NCF	119	Permanent	70
Flo Muls	119	Hostatint	70	Latekoil	19	Nachery-Nagel	112	Necires	127	Perone	48
Fluorol	19	Hostathion	19	Lebox	100	Nacrynal	70	Nekal	19	Persistol	19
Foamaster	141	Humifen	59	Lem-O-Fos	119	Madurit	70	Neo-Cebitate	119	Persynthol	33
Foam-trol	24	Hydrolac	70	Leomin	70	Magala	119	Neopolen	19	Pestanal	70
Fortilac	119	Hydroviton	123	Leophen	19	Magie	26	Neopynamin	123	Peters P.F.	153
Fortilene	38	Hypas	119	Lepton	19	Magnafloc	38	Neoromes	123	Petro	95
Foundrex	65	Hyraulan	19	Leucotrop	19	Magnetic	119	Neozapon	19	Petromeen	24
Freez-Gard	119	ICN/K & K	112	Leukanthren	19	Magni-Form	24	NEP	59	Phenodur	70
Frigantin	19	Igepon	59	Levailr	119	Malix	19	Neptune	19	Phenuren	19
Frigen	70	Ionac	150	Leventin	19	Maniferm	119	Neutrafilm	24	Photine	146
Frozen Dessert	119	Iquafen	59	Lilamin	64	Mapico	19	Neutraramen	24	Phosdrin	118
Fructofin	110	Imidan	119	Lilamuls	64	Maprenal	70	Neutrigan	19	Phosiflex	119
Fyrex	119	Immegan	19	Lindol	119	Maranil	123	Nevchem	64, 127	Phostreat	105
Fyrguard	119	Implenal	19	Lining	70	Marue Oil	41	Nevcin	127	Photo-Pure	119
Fyrlube	119	Inklurit	19	Lipamin	19	Marquart	38	Nevev	127	Phthalopal	19
Fyrolflex	119	Inkrustin	19	Lipoderm	19	Masquol	41	Nevoxy	64	Picaltal	19
Fyrol	119	Ionol	118	Liquimine	24	Matheson	97	Novroz	64, 127	Pigmosol	19
Fyrquel	119	Irgacure	40	Liquiphos	92	Mattheyelec	79	Niax	127	Pinechem	95
Fyrtex	119	Irgalube	40	Liquispers	26	Maxitreat	31	Nippon Kayaku	41	Pinol	55
		Irganox	40	Lite	119	May & Baker		Nisso	95	Piror	127
		Irgarol	40	Lithol	19	80, 97, 94, 116, 172		Nitromagnesium	19	Pitchpur	53
Gafac	59	Irgason	40	LJS	36	Mayosparse	91	Nitrogreen	19	Plasdone	59
Gafamide	59	Irgastab	40	Locron	70	MDS	119	Nitrophoska	19	Plastigen	19
Gafen	59	Ironmaster	100	Loef	115	Medialan	70	NMP	59	Plastolit	19
Gafenox	59	Isanol	19	Loxiol	125	Memtec	150	Noef	115	Plastomoll	19
Gafgard	59	Iso-Cast	123	LR	68	E Merck	20, 112	Noigen	38	Plastopal	19
Galoam	59	Isolflex	19	Luaktin	19	Mergat	70	Nonidet	118	Plioflex	95
Galquat	59	Ispray	55	Lubasin	19	Merpel	48	Nordeutsche	26	Pliolite	95
Gantrez	59	Iupilon	38	Lucarbon	19	Metalex	65	Norit	123	Pliovic	95
Gardemol	78	Iwata	47	Lucidol	123	Metallic	70	Norsolene	95	Plioway	95
Gardinol	78	Jiffy-Sol	119	Lucobit	19	Metallux	70	Novamid	38	Pluracol	19
Gardinols	123	Kadel	127	Luconyl	19	Metarin	123	Novatek	38	Pluradot	19
Gelcarin	123	Kalma	26	Ludigol	19	Metalsol	95	Novolen	19	Plurfac	19
Genamin	70	Karboresin	70	Ludopal	19	Methocel	78, 123	Novopern	70	Plurasafe	19
Genapol	170	Kationan	19	Ludox	48	Microcel		Nuodex	65	Pluril	19
Geniron	95	Kauramin	19	Lufibrol	19	Microfine	90	Nurupan	123	Pluronic	19
Germocid	19	Kauresin	19	Lufiten	19	Micronal	19	Nyancel	41	Plyophen	65
Glascol	19	Kaurit	19	Luganil	19	Mindel	127	Olinor	123	Poligen	19
Glissopal	19	Kemibesto	90	Luhydran	19	Mines Minerals	41	Oppanol	19	Poly B-D	26
Glissoviscal	19	Kemin	26	Lumac	87	Minex	64	Oppasin	19	Polycler	59
Glyezin	19	Kempore	95	Lumilux	70	Minifibers	90	Oracrome	90	Polyteed	91
Glystantin	19	Kena	119	Lumin	19	Mintech	90	Ordram	119	Polyton	41, 123
GMS	1	Ken Flex	118	Lumitol	19	Miracle	1	Orgol Tar	123	Polygel	119
Goodness		Ken React	118	Lumogen	19	Mitrol	34	Ortolan	19	Polymin	19
Shake	119	Kero Fluid	19	Luphen	19	Mitsubishi	26	Orzan	41	Polyox	127
Granofin	70	Kero Flux	19	Lupolen	19	MKC-Enzyme	123	Oxford	16	Polylite	65
Guargel	41	Kero Korr	19	Lupranat	19	Mobilcer	91	Oxitex	118	Polyplasdone	59
Gurr	20	Kero Met	19	Lupranol	19	Mobilsol	91	Oxitol	118	Polyram	19
		Kero Stat	19	Luprintan	19	Mobilux	70	Oxone	48	Polyscience	93
Hakuenka	38	Kerobit	19	Luprintol	19	Mollescal	19	Palagal	19	Polysolvan	70
Halon	123	Kerophon	19	Luprintol	19	Molykkoe	46	Palamid	19	Polysperse	24
Hampshire	153	Kieralon	19	Luprosil	19	Monitor	19	Palanil	19	Polystyrol	19
Hansa	70	Knoxweed	119	Lurafix	19	Mono-Tab	119	Palapreg	19	Polytreat	105
Harshaw	26	Kobar	90	Luramid	19	Morfen	127	Palatex	19	Prefar	119
Hawshaw	26	Kocarb	90	Lurantin	19	Morsilk	119	Palatin	19	Prefix	118
Hatacide	105	Kocida	118	Lurapret	19	Morwet	95	Palatinol	19	Premium	96
Healing	68	Koclay	90	Lurazol	19	Mosskiller	118	Paliogast	19	Prestogen	19
Heatreat	105	Kollidon	19	Luresin	19	Moviol	70	Paliogren	19	Pricat	146
Hecto	19	Koppers	26			Mowilith	70			Primazin	19
Heedta	59					Mowital	70			Primazol	19
Hefti	41									Priolene	95
Heliogen	19									Pristerine	146
Helizarin	19									Prof-Drone	119

SECTION D

CHEMICAL BRAND NAMES CONTINUED

Proalys	85	Seagel	123	Stafol	26	Thixcin	64	Veegum	146
Prochem	106	Seakem	123	Staford Colour	90	Three Bond	146	Venus	47
Prolate	119	Sedipur	19	Stauffer	119, 160	Tiona	141	Veova	118
Propasol	127	Selcote	90	Steelley	41	Ti-Pure	48	Vernam	119
Propiofan	19	Sentry	127	Stenol	123	Tilam	119	Veron	19
Prosynth	70	Sepacid	19	Stepanate	95	Tingle	119	Versamid	65
Protectol	19	Sepacorr	19	Stepanol	95	Tinuvin	40	Verstatic	118
Protexx	53	Sepaflood	19	Sterocol	19	Tipaque	26	Verthion	118
Protonal	95	Sepapar	19	Stockhausen	41	Tire	119	Vialon	19
Provex	91	Separan	123	Stohler	112	Tixogel	123	Victabrite	119
Proxitol	118	Separol	19	Stypol	47	Tokyo Material	26	Victawet	119
Puratronic	79	Sepasolv	19	Styroccl	118	Tone	127	Victor	119
Puromat	19	Sepawet	19	Styodor	19	Tontine	119	Vicure	119
Pyramin	19	Serva	116	Styrofan	19	Tordon	78	Vinacryl	65
Pyrrion Chemie	41	Sesalvan	19	Styrofil	19	Toximul	95	Vinalak	65
Pyroneg	116	Setamol	19	Styrofoam	78	Transport Plus	31	Vinamul	65
Z-Pyrol	59	Shellcool	118	Styrolux	19	Traxx	53	Vinapol	65
		Sheldrite	118	Styromull	19	Treibacher	38	Vinodur	19
Quadrol	19	Shellflex	118	Styron	78	Tri-Tab	119	Vinofan	19
Quantacure	118	Shellsol	118	Styronal	19	Triangle	119	Vinoflex	19
Querton	64	Sherex	119	Sudan	19	Trigonox	123	Vinol	95
Questex	119	Shinkolac	38	Sulcodine	19	Trilon	19	Vinstab	100
Quilon	48	Sico	19	Sulfofon	123	Trioxitol	118	Vinuran	19
		Sicodop	19	Sulphinol	19	Trithene	27	Virtex	100
Radel	127	Sicofil	19	Sulfofon	123	Trithion	119	Viscarin	123
Rakusol	19	Sicoflush	19	Sulphinol	19	Troweltexx	53	Visco	31
Ramasit	19	Sicolen	19	Sumicin	118	TTEX	31	Vitblend	90
Raven	19	Sicomoin	19	Sumitomo	41	Tube	119	Vitel	95
Raybo	41	Siconyl	19	Supercool	38	Turbo	36	Vitexol	19
Raymix	41	Siconyl	19	Super Serv	119	Tutogen	70	Vitrafox	119
Regent 12XX	19	Sicopal	19	Super Stuff	119	Tylopor	70	Volucon	87
Remafin	70	Sicoplast	19	Supercearex	118	Tylose	70	Voronate	78
Remol	70	Sicopol	19	Suprapal	19	Typophor	19	Voranol	78
Renol	70	Sicopuol	19	Surefoam	78	Tyzor	48	VPI	118
Reofos	40	Sicor	19	Suryol	95			Vulcanosol	19
Reomet	40	Sicosperse	19	Surpass	119	Ubatol	108	Vulkaresen	70
Reomol	40	Sicotan	19	Sursolan	19	Ucane	127	Vultac	123
Reoplast	40	Sicotherm	19	Sutan	119	Ucar	127	Vultamol	19
Resamin	70	Sicotrans	19	Swarfega	68	Ucarcide	127	Vydx	48
Resex	19	Sicoversal	19	Sweet-P	119	Ucare	127		
Residex	118	Sicovinyll	19	Sylfat	64	Ucarsan	127	Wacker HDK	70
Resin Rinse	31	Sicstyrene	19	Sylgard	46	Ucon	127	Wallpol	65
Resist	70	Sightsavers	46	Sylit	118	Udel	127	Watchung	95
Resydrol	70	Sigma	58, 80, 112, 116	Syloids	153	Udel	127	Watts Blake Bearne	90
Revacryl	108	Siografil	70	Syltherm	46	Ultmen	31		
Revinex	108	Sigraflex	70	Sylit	118	Ultradur	19	Waxrex	90
Revolution	36	Sigri	70	Syltherm	46	Ultrafine	96	Webb	90
Rheogel	90	Silastic	8, 46	Synasol	127	Ultraform	19	Westalc	90
Rhizocote	90	Silgan	119	Synergist	160	Ultramid	19	Whiterex	90
Rhodene	65	Silibond	119	Syn-O-Ad	119	Ultraphor	19	Wickenol	123
Riedel De Haen	116	Siligien	19	Synthacryl	70	Unichema	95	Winstay	95
Rilanit	123	Silwet	127	Synthecol	33	Unichrom	8	Wingtack	95
Ripcord	118	Slimcide	24	Synthemul	65	Unilab	8	Wresinol	70
Rite-Way	119	Slime-trol	24	Sylvel	55	Unimills	26		
Riviera	119	Silpicone	8, 46	Tamol	19	Uniprint	19	X Grade	118
Roche	110	Slygard	8, 46	Tanacrop	89	Uniperol	19	Xylingen	19
Ro-Neet	119	SMA Resins	26	Taterfos	119	Univar	8	Xyrofin	110
Rohalase	19	Sniper	118	Teepol	118	Univol	8		
Rohament	19	Snowsif	90	Teflon	48, 146	Upgrade	119	Yellotone	119
Rohapect	19	Soi-Kwik	119	Tego	64	Urecol	19	Yogurt Base SS	119
Rohapon	19	Solka Floc	123	Tegosievin	123	Ursol	19		
Roncal	19	Solvaperm	70	Temacolour	141			V-25	119
Rongalit	19	Solvenon	19	Temasept	123			V-90	119
Ronilan	19	Solvex	30	Tenac	38			V-Brite	100
Rota	87	Solvofen	59	Tenite	123			V-Pyrol	59
Rotoflex	70	Somil	59	Tenox	123			V-Pyrol/RC	59
Royalene	38	Sorbead	88, 91	Terathane	48			Vapam	119
Ruehl	123	Sorbifin	110	Tercel	90			Vapona	118
Rural	55	Soromin	19	Tergitol	127			Varcum	65
Rustilo	30	Special Electric	119	Teriuran	19				
		Specpure	79	Terrazite	108				
Saduren	19	Spectranal	70	Tetralin	48				
Sag	127	Spectrasol	21	Tetronic	19				
Salvo	118, 119	Spectrosol	8	Texanol	123				
Sanbland	90	Spotleak	123	Texaphor	123				
Sancure	108	Spraylat	41	Texapon	123				
Sanres	108	Solvex	30	Texapret	19				
Sapbor	34	Spectrosol	8	Texicryl	108				
Sapco	34	SSL	115	Thanol	64				
Saap	119	Standamid	123	Thermexx	53				
Scalacrome	90	Standapol	123	Thermoplast	19				
Scintran	21	Standart	70	Thion	38				
Scolor	90	Stapa	70	Thixatrol	64				
Scotty	5								

OVERSEAS PRINCIPALS Cont. From Page 44

Yakhin Canning	123	Hokushin	71
Yashima	61	Ystral	89
Yellow Springs			
Instr.	130	Zeal 80, 94, 112, 129	
Yew	56	Zeiss C.	132
Yokkaichi Chem.	38	Zohar	122
Yokogawa		Zorelco	38

SECTION E PROCESS CONTROL EQUIPMENT

Pressure Control

3D Instruments	10
Avery-Denison	17
Bellofram	99
Bellofram	10
Cajon	15
Chino	99
Data Industrial	76
Data Instruments	50
Dobros	71
Eckardt	136
Endress & Hauser	50
ENFM	10
Fluke	99
Foxboro	56
Hartmann & Braun	50
B.R. Homersham	71
KDG	71
Kent	81
Matheson	97
Micro Gauge	99
Moore Products	76
Nupro	15
Philips	102
Robinson	
Halpern	50
Rosemount	173
Rossell	95
Setra	10
Solomat	80
Swagelok	15
Teltherm	99
Thommen	99
Turbo-werk	76
United Electric	10
Valmet	10
Wallace & Tiernan	84
Weksler	10
Whitey	15

Flow Control

Anderson	10
BEN	95
Bopp & Reuther	28
Brooks	173
Data Industrial	76
Detronics	76
Dynasonic	10
Eastech	10
Eckardt	136
Endress & Hauser	50
Fluke	99
Foxboro	56
Harwill	10
Hewlett Packard	69
B.R. Homersham	71
Jesco	95
Kent	81
LTH	105
Manning Technologies	2
Matheson	97
Micro Motion	173

MKS	93
Moore Products	76
Neumo	17
Nupro	15
Philips	102
Platon	71
Polysonics	99
Ramapo	10
Rhodes	50
Rosemount	173
Rossell	95
Space Age Electronics	99
Sparling	105
Signet	10
Tokyo Keiso	96
Turbo-werk	76
Valco	5
Valmet	10
Wallace & Tiernan	84
Watson Marlow	99
Waber Sentec	50
Whitey	15
Yokogawa	71

Mass Control

Avery	17
Avery Parsons	17
Applied Instruments	10
Data Industrial	76
Driver Southall	17
EMC	50
Endress & Hauser	50
Fluke	99
Foxboro	56
Kent	81
L Oertling	17
Matheson	97
Micro Motion	173
MKS	93
Moore Products	76
Philips	102
Ronnan	136
Rosemount	173
Turbo-werk	76
VG Group	2
Wallace & Tiernan	84
Yokogawa	71

Volume Control

Alite	17
Applied Instruments	10
Bopp & Reuther	28
Brooks	173
Data Industrial	76
Endress & Hauser	50
Fluke	99
Foxboro	56
Harwill	10
Jesco	95
Kent	81
Madison	10

Magnetrol	10
Matheson	97
Moore Products	76
Neumo	17
Philips	102
Rhodes	50
Ronnan	136
Rosemount	173
Turbo-werk	76
Wallace & Tiernan	84
Yokogawa	71

Density Control

Anton Paar	129
Data Industrial	76
Erwin Sick	50
Rluke	99
Kay Ray	173
Kent	81
Matheson	97
Micro Motion	173
Moore Products	76
Ohmart	56
Ronnan	136
Rosemount	173
Turbo-werk	76
Valmet	10
Yokogawa	71

Temperature Control

Applied Instruments	10
Chino	99
Comark	71
Data Industrial	76
EMC	50
Eroelectric	56
Eurotherm	50
Foxboro	56
Hewlett Packard	69
Kent	81
Moore Products	76
NZH	167
Partech	129
Philips	102
RKC	71
Ronnan	136
Rosemount	173
Rossell	95
Shimaden	88
Solomat	80
Teltherm	99
Toho	50
Turbo-werk	76
Turnbull Controls	50
United Electric	10
Valmet	10
Waksler	10
West	10

pH Control

Beckman	173
Benchlab	167
Conducta	50

Dostronic	167
Foxbro	56
Great Lakes	10
Horiba	136
Jesco	95
Kent	81
Lakewood Inst.	76
LTH	105
Microtech	167
New Brunswick	129
Partech	129
Philips	102
Portalab	167
Prominent	28
Rosemount	173
Rossell	95, 105
Serfilco	84
Solomat	80
TBI	76
TOA	71
Uniloc	173
Wallace & Tiernan	84
Yokogawa	71

Conductivity Control

Beckman	173
Benchlab	167
Chino	99
Conducta	50
Dostronic	167
Fluke	99
Foxboro	56
Great Lakes	10
Hewlett Packard	69
Horiba	136
HRL	39, 106
Ingold	93
Jesco	95
Kent	81
L.T.H.	105
Microtech	167
Partech	129
Philips	102
Portalab	167
Rosemount	173
Rossell	95, 105
Solomat	80
TBI	76
TOA	71
Uniloc	173

Vacuum Control

Alcatel	93
Cajon	15
Data Instruments	50
Edwards	130
Eckardt	136
Endress & Hauser	50
Foxboro	56
General Engineering	71
Hartmann & Braun	50
Kent	81
Leybold Heraeus	99
Philips	102
Rosemount	173
Setra	10
Vacuum Generators	2
Valmet	10
VG Group	2

Turbidity Control

Beckman	173
Dr Lange	50, 93
Eurocontrol	76
Hach	130
Horiba	136
Instrumark	2
Kent	81
Rosemount	173
Seres	95
Sierist	10

Oxygen & Chlorine Monitors

Anacon	56
Beckman	173
Cosmos	105
Delta Analytical	76, 93
Dohrmann	2
Dr Thiedig	
Dynatron	56
Endress & Hauser	50
Hach	130
Horiba	136
Ingold	93
Jesco	95
Kent	81
Orion	129
Portocel	105
Prominent	28
Rosemount	173
Rossell	95
Solomat	80
Teledyne Analytical	130
Uniloc	173
Wallace & Tiernan	84

On-Stream Analysers

Anacom	50
Bristol Samplers	2
Foxboro	50
Hach	130
Hartmann & Braun	50
Hewlett Packard	99
Horiba	136
HNU	136
Instrumark	2
Kent	81
Lakewood Inst.	76
Maihak	136
MSA	50
Pacific Analytical	117
Prominent	28
Seres	95
Teledyne Analytical	130
TPA	102
Westinghouse	136

SECTION F PROCESS EQUIPMENT

Mixers

Franz Morat	89
Fryma	84
I.K.A.	93
Jesco	95
Lightnin	105
Mastermix	64
PK-Niro	
Atomiser	165
Techmatic	61
Witt	97

Filters

Airpure	51
AMF Cuno	84
Amiad	71
Autotrol	28
Balston	95
Bofic	68
Bran-Lubke	38
Brunswick	180
Culligan	95, 180
Cuno	84
DDS Filtration	165
Email	51
Filterite	180
Filtomat	28
GAF	59
Gelman Sciences	61
Luwa	77
Manville	95
Matheson	97
Memtec	180
Millipore	95
Murolene	180
NZN	167
Nuclepore	95
Portals	105
Purimax	179
Pyracone	51
Sartorius	89
Schleicher & Schuell	138
Serfilco	84
Star	95
Stella-meta	105
Viledon	77
Zetaplus	84
Zetapor	84

Sterilisers

Accord	89
Bonozone	28
C.F.G.	28
Finn	84
Hanovia	180
Hypochlorinators	105
Jouan	61
Ozonair	28
Silter	93
Steriflow	42
Trailgaz	28
Trojan	84
Uvaq Ltd	167

Grinders

Alpine	84
Dynomills	27
Fryma	84

I.K.A.	93
Premier	27
Seepex	95

Fans

Accent	167
Fantech	77
Fumeflow	142
Heil	86
Maskell	86
New York Blower	77
Thermoplastic	126
Ziehl-EBM	77

Pumps

Alcatel	93
Beta Technology	45
Charles Austin	83
Edwards	130
Gea Ahlborn	72
Haskel	15
Hidrastal	95
Howard	84
Ircem	167
Javac	83
Jesco	95
Labour	99
Ladish	56
Leybold	83
Little Giant	71
MacEwan	84
Metering Pumps	105
Milton Roy	105
Myers	28
Peabody Barnes	95
Pulsafeeder	56
Rossell	95
Sartorius	89
Seepex	95
Serfilco	84
Starite	167
Watson Marlow	99
Wallace & Tiernan	84

Valves

Asco	99
Autoflo	10
Danfoss	99
F.I.P.	105
Javac	83
Ladish	56
Masoneilan	56
Matheson	97
Nupro	15
Oliver	71
Sartorius	89
Snotrik	15
Whitey	15

Heaters

Accent	167
Gea Ahlborn	72
Pasilac	84

Coolers

Gea Ahlborn	72
Pasilac	84

W. GRAYSON & ASSOCIATES LTD

Analysts

Chromatography - GLC, HPLC, etc

Corrosion Consulting

Food & Pharmaceutical Analysis

Forensic Investigation

Gas Analysis

Geochemical Analysis & Assayers

Microbiology

Product Development & Metal Analysis

Plastics, Packaging & Oils

Water, Effluents & Wood Analysis

(09) 590-329

A TELORC registered laboratory
Telephone

Hugo Johnson Drive, Penrose, Auckland, New Zealand.
P.O. Box 12-545, Penrose FAX NZ (09) 599-044.
Also at Invercargill Phone: (021) 82-247

Member NZ Association of Consulting Laboratories

TECHN 969

Hamilton Analytical Laboratory Ltd

CONSULTANTS IN APPLIED CHEMISTRY,
NUTRITION & VETERINARY SCIENCE
H.F. DEWES, DIP.AG. B.V.SC., FAVCS
& M.D. LOWE, MNZIC

P.O. BOX 4136, HAMILTON EAST, HAMILTON, NEW ZEALAND.
PHONE 395-143; A.H. 64-170, 496-267
LABORATORY: NOLAN BUILDINGS, 43 HOOD STREET,
HAMILTON, NEW ZEALAND

Hamilton Analytical Laboratory Limited offers a service of nutritional advice and management to the dairy, sheep, horse and goat sectors of primary production. A wide range of plant and animal tissues and fluids are examined; these analytical data are used to provide a protocol for herd nutritional management, which includes fertiliser, dosing and drenching information.

Analytical chemistry and veterinary science investigations are also undertaken in association with the insurance assessments industry, as well as for general purposes. In conjunction with its associated company, Scientific Associates Limited, an investigative and consultative service in applied technology is offered in the fields of electronics and physical measurement.

Member NZ Association of Consulting Laboratories

OVERSEAS PRINCIPALS CONTINUED

Falcon	112	Guert	89	Hook & Turner	130	Grp.	77	Treatment	105	Micro Motion	173
Falling Number	129	Gullton	71	Horn	136	Jones-Hamilton	8	LDC	117	Microliife	112
Filtercold	180	Gulfton-West Instr.	10	Hotpack	93	Jouan	61	Lea Ronal	68	Micromeritics Corp.	93, 117
Finnigan	130	Haake	129	Hottinger Baldwin	50	Joyce Lobel	129	Letromed	117	Midland	47
Fischer Instr.	129, 130	Haake-Buchler	129	Houseman	105	Jughans	80	Leitz Wetzlar	99	Miele-	130
Fisher Scientific	117	Haake-Mess-		Houston Instr.	85	Julabo	61	E & I Lewis	142	Mijnhardt	117
Fiske	130	Technik	130	Howard Pump	84	Junga AG	130	Leybold Heraeus	117	Millipore	
Fisons Scientific	130	Hach	130	Hubbard Refrig.	130	Juniper	80, 117	Lightnin Mixers	105	Intertech	112
Flaig & Sons	61	Haenni	71	Hubur	38	J&W Scientific	117	Lightpath Optical	112	Milton Roy/LDC	2
Flow Laboratories	80	Haic/Royco	130	Huels Ag	27	Kalama	26	Linberg	93	Mines Minerals	41
FMC Corp.	27	Haifa Chem.	122	Hughes &		Kali &		Line Seiki	62	Minolta	38
Forma	130	Haltermann	65	Hughes	116	Salz	18, 95, 123	Linseis	117	Mitsubishi	38
Fortuna	93, 159	Ham Baker	105	Humanoid	7	Kali-Chemi	123	Lion Labs.	129	Mitsubishi	38
Foss	129	Hamamatsu	117	Systems	7	Kali Exports	95	Littlemore	38	Petrochem.	26
Foxboro	56	Hamilton		Hunter Labs	2	Kalle AG	70	Lloyd J.J.	130	Mitsui Ogawa	
Franz Morat	89	5, 7, 117, 129		Hybritech	158	Kallestad Labs	112	LMD	7	Seiki	38
Freuquan Chem.	47	Hammo	117	Hynson Westcott & Dunning	112	Kansai Musashi	38	Lobel Chemical Corp.	26	MJK	56
Fritsch	93	Han Kook Hi-tech	50			Kao Chemicals	118	Lonza	122	MKC-Enzyme	123
Fryma	84	Hanna Inst.	7, 80	IAE	7	Kavlico	71	Lowenstein	123	Mobil Oil Corp.	91
FTS Systems	80, 93	Hanovia	180	latron	130	Kayline	80	Lucas-Meyer	123	Modern Controls	130
Fukuden Inc.	50	Hapke	19	IBM	99	Kay-ray	81	Lucky Gold Star	123	Molecular Design	99
Funke-Gerber	94, 112	Harco	38	ICI	47	KC Industries	140	Luner Radiatum	110	Moore Industries	76
GAF Corp	59	Hardmans	108	icalis Data	18	KDG	71	Luwa	77	Moore Products	76
Galex	119	Harshaw	129	ICI Atlas Inc.	92	Kemble Instr.	21	Lysi	123	Morbank	80
Gallay	80	Chemical	26	ICI Dyestuffs	82	Kenogard	26	Macbeth	130	Morehouse Int.	65
Gallenkamp	80, 112, 129	Hartmann & Braun	50	ICN Biomedical	7	Kenrich	64	Macherey-Nagel	5, 18, 112	Morton	123
Gardner	130	Haskel	15	ICN/K & K	112	Kerchem.	118	Magnesum	95	MSA	56
Gastec	80, 136	Havard App.	130	IEC	117	Kern	159	Elektron	123	MSE	80
GBC Scientific Equip.	2	Hawksley	129	Ihara Sangyo	26	Kerr McGee	100	International	10	Multispec	129
GCA/Precision	129	Heat systems	93, 129	Kaisha	26	Kett	38	Magnetrol	158	Munsell Colour	130
GEA Ahiborn	72	Herbron S.A.	100	IL	117	Kevox	18, 117	Maihak	136	Munters-Rotaire	51
Geiger	38	Hefti	41	Indusmin	64	Kikuchi	94	Mallinckrodt	158	Murex	123
Gelman Sciences	61	Heidolph	129	Infrared Eng.	129	Kimble	94	Manning	2	Murphy	71
Gems	56	Heil Process Equip.	86	Ingold	93	Kistler	93	Techologies	5, 95	Murray S.	80, 112
General Electric	123	Helena Labs	112	Inor	56	Kistler Morse	50	Manville Corp.	123	Naarden	27
Geometric Data Corp.	132	Helix	80	Instr. Colour	64	Kinematica	130	Marine Colloids	105	Nalco Chem.	31
Georgia Kaolin	96	Hellma	129	Systs.	64	Kinney	105	Marley Cooling Towers	105	Nalge	129
Gerhardt	94	Hendriks & Sommer	108	Instrumark	2	Kip & Zonen	130	Marquard & Kirsch	119	Nanospec	7
Gernert	123	Hengstler	50	International Light	99	Knapsack AG	70	Manville	95	Napco	93, 99
GFL	89	Henkel AG	38, 123	Interox	141	Knitmesh	86	Marville	41	Narashinge	117
Gibco	61	Henkel-Nopco	141	Interscan	136	Kokusai	130	Marville Oil	41	Natal Tanning	64
Gilford	73	Hensholdt	132	Ionac	150	Commerce	130	Mason Oil	56	Extract	64
Gilson	93	Hensholdt	132	Ionics	136	Konon	150	Masoneilan	56	NDT Supplies	161
Glassman High Voltage	7	Heraeus Christ	112	Ionode	7	Kopfers	26	Mastermix	64	NEC Sanei	62
Glaswerk	80, 159	Hercules	65	IOP	26	Kratos	182	Matheson	97	Nelson Analytical	99
Glen Creston	130	Herez	116	ISA	7	Kratel	77	Mattson Instr.	2	Neodischer	130
Gloria	123	Hertel & Reuss	123	ISC Chem.	38	Kronos-Titan	64	May & Baker	87, 89	Neotronics	136
Glynwed Tubes & Fittings	75	Heto	129	Isco	130	Kryolit	123	Mayes	18	Neumo	17
Goerz-Metrawatt	81	Hettich	94	ISI	7	Kuhner	93	Mayco	123	Nevcin Chem.	127
Goldschmidt T.H.	64, 65, 123	Heubach	95, 100	Ismatec	130	Kulzer	89	McGregor W.D.	112	Neville Chem.	64
Goodlass	47	Hewlett		Iso-Cast	123	Kunstharsfabrief		MCI	38	Neville Cindu	127
Goodlass Wall	47	Hexcard	69, 99	Isopad	129	Syn.	26	Measurement Technology	50	Newbound	129
Goodyear Int.	95	Hexcel	123	Israel Chemicals	95	Kuwait Melamine	38	Medik	89	New Brunswick	129
Gottl Kern & Son	73	Hiac/Royco	130	Iwata	47	Kyowa	130	Meer	123	New York Blower	77
Gould Modicon	56	Hickson & Welch	95	J.J. Lloyd	130	Labconco	130	Memtec	150, 180	Nichiryo	80
Gow-Mac Instru.	5	Hidralast	95	Janke & Kunkel (IKA)	80, 93	Labline Instru.	130	Merck E. 21	112, 159	Nicolet	129
Gradient Labs	99	Histolab	116	Jasco	129	Labsystems	159	Meriam	56	Nihon	38
Grant		Hitachi	7	Jenag Equipment	84	Ladish	56	Merichem	127	Nikon	129
Instruments	112	Hocking	38	Jencons	112	Lakewood Inst.	76	Mess & Regeltechnik	49	Nippon Gohsei	38
Graticules Ltd	130	Hodag	41	Jesco	95	Lauda MGW	132	Metering Pumps	105	Nippon Kayaku	41
Great Lakes	10, 123	Hoechst A.G.	70, 108	Jet	28	Lancer MGW	132	Metrohm	130	Nippon Oils & Fats	26
Grefco	123	Hoechst Ceram	140	Jigtool High Vacuum	83	Lancer Oxford	89	Metrolab	7	Nissan Girdler	123
Gremont	95	F. Hoffmann-La Roche	110	Jobin Yvon	7	Landsaver	167	Mettler	129	Nissho Awai	123
Griffin & George Group 3	7	Holland Colours	123	Johnson Labs	112	Dr Lange	50	Micro-Measurements	99	Nitto Jushi Kogyo	38
		Home Waterbehandeling	105	Johnson Matthey		Lankro	141	Micro Gauge	99	Nittobo	38

OVERSEAS PRINCIPALS CONTINUED

NL Baroid	90	Pierce Chemical		Riedel de Haen		Shinetsu	38	TBI	75	United Glass	80
NL Chemicals	64	Co.	159		70, 116	Shintech	38	TCS	117	US Biochemical	159
Noranda	123	Pilot	41	Riken Denshi	93	Shiraishi Calcium	38	Tecator AB	130	Uvaq Ltd	167
Norddeutsche		Planer	117	RKC	71	Shore Instr.	130	Techmark Corp.	10	UV Products	129
Affinere	26, 123	Plint & Partners		R & L	80	Sieger	136	Technicon Instr.	124		
Norit	123	Ltd	130	Robinson Halpern	50	Sigma	58, 80, 116	Techne	93, 129	Valco	99
Normag	123	Pluss Stauffer	65	Rohn GMBH	19	Sigmamotor	130	Tecnorama	112	Valco Instr.	5
Noronix	10	PMC	93	Rolyn Optics	22	Signet Scientific	10	Teijin	38	Valmet	10
Norwegian Talc	65	Polaron	7, 130	Ronan	136	Sigri	70	Tekflo	76	Van Kel	93
Novasina	130	Police Science	130	Roots	28	Siberline	123	Teledyne Anal.	130	Varec	173
Novo AG	141	Polymer Labs.	18	Roquette-Freres	123	Silenka BV	19	Teledyne Taber	130	Varian	130
Nuclepore	95	Polypor. Int.	38	Rosemount	173	Simco	7	Teletron	76	Vega	76
Nuemo	17	Portacel	105	Rossell	95	Sime Darby	38	Telsec Process		Vela	17
Nunc	61	Portec	62	Rotex Chemie	123	Simport	158	Analysers	2, 102	Velsicol Chemical	
Nuodex	65	Poulsen	112	Rotronic	38, 50	Singleton	38	Temtool Ltd	130	Corp	27
Nupro	15	Power & Buckley	7	Ruehl Chemie	123	Sirco Controls	68	Tennelec	7	Veneret	112
Nyma	41	PPG	47	Runne		SKC	99	Tensia	37	VFT	19
		Precisa	80	Zentrifugen	99	SLM Aminco	129	Tequipment	130	VG Group	2
OBI	38	Precision Sampling	5	Russell PH	117	Smit & Zoon	19	Terra Enterprise	123	Viledon	77
Oerling	17	Presto-Tek	99			Snotrik	15	Testing Machines		Vinyl Prods.	65
Ohaus Scale	99, 112	Princo	76	Saifecs	123	Societe Francais des		Inc.	130	Virginia	
Ohmart	56	Prior	130	Sankyo Rikagaku	68	Colloides	41	Texaco Chem.	64	Chemicals	100
Oldelft	7	Process Chem.	65	Sannor Ind.	108	Societe Generale	95	The Nucleus	7	Virtis	130
Oliver Eng.	71	Projectina	130	Sanyo	80	So Low	80	The Tintometer	112	Viskase Corp	127
Olympus Optical	73	Propper	80	Sarasota	173	Soilmoistur Corp.	130	Therados	7	Vitri	80
Omron Tateisi		Protan AS	95	Sargent - Welch	38	Solartron	71	Thermal		VWR	116
Electronic	99	Protex	41	Sarstedt	93	Solomat	80	Syndicate	80, 112		
Organics	123	Protimeter	38	Sartorius	89	Solvay	118	Thermoline	93		
Orion	129	Protovale	38	Sauter	129	Sonics	159	Thermoplastic		Wacker	
Ortho Diagnostics		Pulsafeeder	56	Savant		Southern		Engineering	112	Chemie	70, 141
Systems	158	Pye Unicam	102	Inst.	5, 130, 159	Limestone	41	Thiedig	123	Walden Precision	
Ortho Research		Pyrion Chemie	41	Scanditronics	7	South Wales		Thommen	99	Apparatus	94
Instruments	117			Schenk	17	Switchgear	71	Thor Chem.	38	Wallace &	
Ota Keiki	130	Quadrex	18	Schering AG	95	Spectra-Physics	129	Toa	71, 73	Tiernan	84
Otsuka Optical	25	Qualimax	50	Schiller	110	Spectronics	7, 159	Tokyo Keiso	99	Ward	
Oxford Analytical		Qualtex	129	Schliecher &		Spellman	7	Tokyo Material	26	Blenkinsop	118
Instr.	2	Quadro	84	Schull	70, 116, 138	Spraylat	41	Toledo Scales	134	Wards Natural	
Ozonair	28	Quest Int.	27	Schoeletter	68	Springham	112	Tomah Products	95	Science	112
		Queue	117	Schott		SSI	5	Toray Ind	110	Waring	93, 129
Pacific Instr.	85	QUV	38	Group	80, 99, 159	Staaliche	112	Touch-Flo	175	Waters Assoc.	7
Pacific Scientific	7			Schott Jena	112	Stanhope		Toyama Sangyo	18	Watson Marlow	29
Packard Corp.	130			Schou-Palsgaard	41	Seta	129, 130	Toyo	117	Watts Blake	
Pag Oerlikon	80	Radenthein	38	Schulman	38	Stanton		Toyo Roshi Int.	25	Bearne	90
PA Hilton Ltd	130	Radioassay Systems		Science		Instruments	17	Toyosoda	117	Wavin KLS	86
Parco	116	Labs	112	Accessories	170	Starna	80	TPS	7	Weber Sentec	50
Parr	93, 129, 130	Radiometer	129	Scientific Equip.		Stauffer		Tracor Instr.	2	Weksler Intr.	10
Pascal Eng	130	Ram	50	Design	99	Chemical	160	Trailgaz	28	Wescan	5
Paterson Candy	105	Ramco Labs	112	Sciex	99	Steeley	41	Transagro	123	Wesmar	81
PBI	89, 117	Rank	93	Scintrex	99	Stella-Meta	105	Triebacher	38	Westfalia	84
PCI	105	Rapier Drives	50	SCM Chemicals	141	Stepan		Triac Controls	112	Westinghouse	136
Peabody Barnes	95	Raunchfuss Instr.	130	Scott	99	Chemicals	95	Triclover	56	Westvaco	41
Penarroya	123	Rausch	123	Scott Bader	108	Stevens	93	Tripette &		Whatman	
Penick Corp	68	Ravenfield	38	Siebold	99	Stevens C.	132	Renaud	130	5, 80, 94, 112	
Pennwalt	68	Raybo	41	Sekonic	62	Stockhausen	41	Trojan Environmental		Wheaton	112
Penny & Giles	50	Raytest	7	Selbys Scientific	112	Stohler Isotopes	112	Prod.	84	White Electrical Co.	
Perkin-Elmer		RDI	7	Seppic	122	Stratford Colour	90	Turbo-Werk	76	Ltd	130
Corp.	117	Reactor		Sequoia-Turner		Struers KS	130	Turck	56	Whitey	15
Permutit	105	Experiments	7		129, 130	Studsvik	7	Turnbull	50	Wickhen	123
Perstorp	118, 123	Rechnor Ind.	50	Seres	95	Sumitomo	41	Tuta Labs	112	Wild	99
Petracourt	62	Record	123	Seriflo	84	Supelco	112			William Boby	105
Petrochemicals		Red Valve	56	Serva	116	Superior	80, 89	UKF BV	123	W. Winkelmann	50
Intl.	95	Reed	123	Servo-Chem.		Swagelock	15	Unichema		Witco Chemical	
Petrofina	38	Reftec	140	Fabrik	65	Swift		Chemie	95	Corp.	27
Petrotest	93	Reichert	130	Seward	89	Instruments	112	Uniloc	173	H. Woesthoff	
Pharmacia LKB	117	Reichhold Chem.	65	SGE	5, 130	Syland	93	Unimills	26	Messtechnik	50
Philip Harris	116	Resart	123	Shackleton	50	Sylvachem	64	Union Carbide		WP Instruments	117
Phillips	102	Retsch	130	Shandon		Sylvania	123	Corp.	127	Wright Chem.	
Phipps & Bird	130	Revco	129	Southern	129	Synergist	159	Union Optical	130	Corp.	105
Phoenix		Revcom	50	Sheen	38, 130	Takeda	141	Uniroyal Chem.	38	A. Wright	130
Furnaces	123	Revertex	108	Shell Intl.	118	Talbot	105	Unisonics Pty		Wyatt Technology	38
Phoschem	100	Rheodyne	2, 5	Sherex	26	F.W. Talbot	105	Ltd	130		
Photovac	5	Rhodes & Son	50	Shimaden	88	Tamson	93	United Catalysts	123		
Photron Pty.	2	Riber	7	Shimadzu	18	Taylor-Wharton	127	United Electric	10		

Cont. Pg 39

Covering the field in analytical instruments

Varian 3000 series Gas Chromatographs ▶

Models 3300, 3400, 3500, 3600

Choose from a range of injectors, detectors and flow controls to suit your applications:

- Standard or automated systems.
- Packed column or capillary options.
- Data handling options.



SpectrAA Series Atomic Absorption Spectrophotometers ▶

Models 10/20, 30/40, 300/400

Single and double beam. Choose from a range of flame controls, lamp turrets and background correction, levels of data handling from routine inboard to advanced PC operation, even Zeeman systems. All from the company that pioneered atomic absorption – Varian.

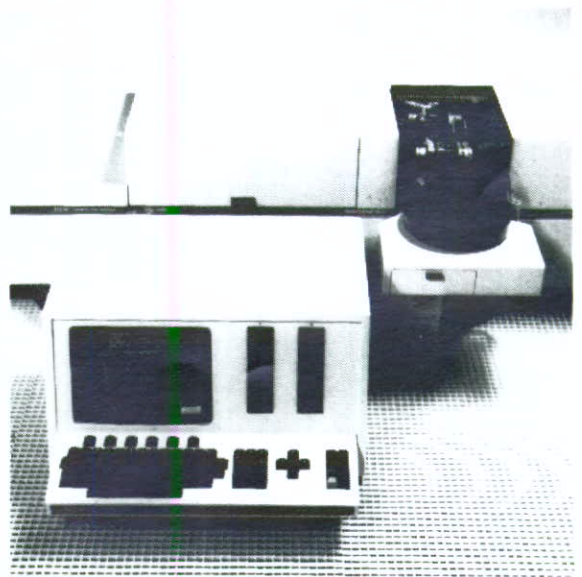


The 3000 Series has a model and configuration to suit you.

◀ DMS Series UV-Visible Spectrophotometers

Models 80, 90, 100, 200, 300

A range of double beam instruments for all applications from routine to research. Buy only the features you need and choose from a wide range of accessories and sample-handling systems. Apply the power of advanced data handling, graphics displays and applications packages.



Marketed by

Salmond Smith Biolab Ltd
Wilton Instruments Division

AUCKLAND WELLINGTON CHRISTCHURCH
Private Bag Northcote 9 P O Box 31-044 P O Box 1813
Phone 418-3039 Phone 697-099 Phone 663-663

WNT 141



VERY INTELLIGENT SOLUTIONS FOR YOU



S & S MEMBRANE FILTERS AND FILTER HOLDERS



BEHRING DIAGNOSTICS SECTION
Hoechst New Zealand Limited
C.P.O. Box 67, Auckland
Phone 527-8068. Telex 2338

Schleicher & Schuell

THE COMPLETE RANGE FOR FILTRATION/SEPARATION