Rheology Solutions

# Applications Laboratory and Contract Testing Capabilities Statement

**RHEOLOGY SOLUTIONS PTY LTD.** ACN 082 479 632
**HEAD OFFICE:** 15-19 Hillside Street, Bacchus Marsh, Victoria 3340 Australia. PO Box 754, Bacchus Marsh, Victoria 3340 Australia.
**Telephone:** +61 3 5367 7477 **Facsimile:** +61 3 5367 6477 **Email:** info@rheologysolutions.com **Website:** www.rheologysolutions.com

RHEO096

# CONTRUCTION AND MINING CONTRACT TESTING KIT

## Table of Contents


- Company Profile
- Applications Laboratory
- Materials Testing for the Minerals Processing Industry
- Technical Literature available for Mining Applications
- Technical Note: Mineral Slurries I – Slurry Rheology & Pipeline transport properties. An Overview
- Technical Note: Mineral Slurries II – Overview of Rheology based process challenges for the Mineral Processing Industries
- Applications Laboratory Instruments – Liquid Testing
- Contract Testing Request Form
- Sample Testing Request Form



**Contact:**
Rheologist

Email: info@rheologysolutions.com

Rheology Solutions

# Company Profile

Rheology Solutions Pty Ltd is a specialist sales and service organisation dedicated to the science of materials characterisation and are the exclusive Australian distributor for the product names HAAKE, NESLAB and Thermo Scientific from Thermo Fisher Scientific, Optical Control Systems, Marimex Industries Corporation and Schleibinger Gerate range of equipment and instruments.

Rheology Solutions recognises the importance of specialisation and dedication to a specific science and, as such, provides full technical support and service throughout Australia. The Company goal is to integrate industry experience and materials characterisation techniques to provide practical solutions for customers.

Rheology Solutions has an established applications laboratory equipped with a comprehensive range of instruments to meet the requirements of material characterisation. Specialist contract testing services are also available and contracts can be tailored to suit discrete tests or protracted testing requirements involving a series of tests over a period of weeks or months.

A range of seminars and application specific workshops as well as product launches and demonstrations are provided throughout Australia. The seminars and workshops are designed to meet the needs of specific customer and industry applications.

Rheology Solutions has its head office in Victoria and works with a team of specialist sales and factory trained service personnel throughout Australia. The combined experience of this team ensures that Rheology Solutions are able to provide their customers with access to the products to ensure that the right technical support and service is provided.

The product range exclusively available includes:

- **Materials Testing Equipment**
  Rotational viscometers, compact viscometers, freeze/thaw units, shrinkage cones and shrinkage/expansion units.

- **Polymer Testing Instruments**
  Micro compounders, torque rheometers, mixers and extruders, chill rolls and winding units, film quality scanning systems, pellet scan system, powder testing system, melt analysis and testing system, optical online quality control mini calendar, stretch roll and winder system, measuring extruder, APLAIRS - online control of cast or blown film, film quality testing system, wide web inspection system, sample testing unit, polyester resin online analysis, pellet analyser, pellet shape and size distribution unit.

- **Process Rheometers**
  Melt flow indexers, automated melt flow indexer, continuous melt flow indexer.

Rheology Solutions

- **Process Viscometers**
  Sensors for low, medium, high, very high viscosities and custom designed sensors.

- **Rheometers**
  Controlled rate, dynamic oscillation, controlled stress, modular

- **Temperature Control**
  Immersion circulators, bridge circulators, open bath circulators, shaking water bath, heating circulators, refrigerated circulators, cryostats, immersion coolers

- **Twin Screw Extruders**
  Twin screw compounding equipment for laboratory through to production applications

- **Viscometers**
  Falling ball, battery operated, rotational for QA or QC applications, micro viscometers

We look forward to discussing your requirements.

**Focused** on providing our **customers** with materials characterisation **solutions** through knowledge, experience and support.

Rheology Solutions

# Applications Laboratory

Rheology Solutions has invested in a fully equipped applications laboratory to further increase the level of customer focus and application support.

Specialist contract testing services are available and contracts can be tailored to suit discrete tests or protracted testing requirements involving a series of tests over a period of weeks or months.

The key areas of responsibility for Tim incorporate:

- Technical support for new and existing Rheology Solutions customers.
- Customer method development & validation.
- Customer training covering rheology theory and practice.
- Development and facilitation of rheology seminars and workshops.

Rheology Solutions has invested in a fully equipped applications laboratory to further increase the level of customer focus and application support. The appointment of our technical manager and the laboratory facilities has proved to be a great asset to new and existing customers. These initiatives are providing a valuable resource to the growing customer base within the field of rheology and material characterisation.

## Instruments & Equipment in the Applications Laboratory

The Rheology Solutions applications laboratory is equipped with a comprehensive range of equipment and instruments to meet the requirements of material characterisation. The equipment and instruments currently available are:

- Haake RheoStress RS80 – controlled stress rheometer.
- Haake RheoStress RS150 - controlled stress rheometer.

**Tim Kealy** *setting the zero point on the RheoScope*

- Haake RheoStress RS6000 - modular, high temperature controlled stress rheometer.
- Haake CaBER 1 - Capillary Breakup Extensional Rheometer.
- Haake Melt Flow Indexer.

This combination of instruments and equipment allows the testing and definition of the material properties of most solids and liquids. In this way Rheology Solutions can provide unparalleled expertise and customer advice for sensible instrument and sensor selection as well as consultation and test procedure development.

This range of on-site instrumentation also permits Rheology Solutions to undertake comprehensive contract consulting and sample testing across most applications.

The precision and reliability of all data collected during testing is examined through multiple tests and comparison and dissemination of all data collected is passed to the relevant parties.

The continued reliability of our instruments is ensured through a schedule of regular maintenance and calibration checks, using calibration oils and weights for the fluid and solid testing instruments respectively.

## Contract Testing Services

Specialist contract testing services are also available and contracts can be tailored to suit discrete tests or protracted testing requirements involving a series of tests over a period of weeks or months.

Contract testing services specifically for industrial applications is available. A range of comprehensive data can be provided for:

- Liquid properties.
- Creep & recovery tests.
- Viscoelastic moduli.
- Flow curves.
- Yield stress.
- Viscosity curves.
- Extensional properties including:
  - Apparent extensional viscosity.
  - Time to break-up of strands.
  - Extensional constants.
- Concentration and temperature profiles.
- Effects of particle size distribution.
- Effects of additives and viscosity modifiers.
- QA/QC for optimal processing.

These tests will provide valuable information for process design, modification and control. Test results can be provided simply as data files or supplied with complete interpretation and recommendations.

Additionally, Rheology Solutions can facilitate testing at the overseas suppliers laboratories when required.

**Focused on providing our customers with materials characterisation solutions through knowledge, experience and support.**

Rheology Solutions

# Materials testing for the minerals processing industry

**T.Kealy,**
*Technical Manager*
*Rheology Solutions Pty Ltd*

Specifically for the hydrometallurgical industry, rheology is of critical importance in phase separation processes (including sedimentation, floatation, cyclone performance). These processes depend on rheological parameters such as viscosity, thixotropic tendencies and yield stress.

The Rheology Solutions applications laboratory has cutting edge equipment, capable of measuring the above parameters, and of providing interpretation of the results if necessary. Laboratory equipment includes highly sensitive, specialised, modern instruments and sensor systems, capable of measuring complicated or difficult fluids such as those with very low viscosity (like some supernatants), or those with a highly settling solid phase.

Information such as shear viscosity curves, thixotropic (time related structural changes) behaviour and flow curves may be obtained for interested clients. These measurements may be obtained as a function of temperature, solids density, or to monitor the effects of changes in any additive species or concentration.

With this information the engineer may change the process, or design new unit operations to maximise the potential benefits to be obtained from the physical properties of the processed fluid, or at least minimise the potential for changing product quality or throughput (due to changes fluid properties related to changing environmental or process parameters).

Rheology Solutions is pleased to provide this service and support to interested parties, and to make our rheological expertise available to the mineral processing community. Our range of testing and interpretation services is further supported by customised workshops, training and seminars to cover the needs of individuals, businesses or industry sectors, covering introductory, intermediate or advanced theory and practice of rheology. This can be supplemented with application specific workshops.

Rheology Solutions

# Technical Literature Available for Mining Applications

Rheology Solutions Pty Ltd has a variety of literature and documentation available for the mining industry. This information comes from a variety of sources including the instruments manufacturers and also Rheology Solutions.

| Ref No. | Title |
|---|---|
| **HL-036E** | Rheology of Lubricating Greases |
| **MX002** | Measurement of ceramic slurry for porcelain, ceramic tiles and sanitary industries |
| **Rheo 006TP** | No, It Doesn't Flow |
| **Rheo 007TP** | Laboratory Evaluation Of In-Situ Gelled Acids For Carbonate Reservoirs |
| **Rheo 010TP** | The Role Of Solution Chemistry In The Stability And Detachment Of Cohesive Kaolinite Particles |
| **Rheo 012TP** | Brief Report On The Rheological Considerations For Applications With Brown Coal:<br>1 Fly Ash Slurries<br>2. Raw Brown Coal Slurries |
| **Rheo 013TP** | Technical Note 1: Mineral Slurries Slurry Rheology And Pipeline Transport Properties |
| **Rheo 014TP** | Technical Note 2: Mineral Slurries Overview Of Rheology-Based Process Challenges For The Mineral Processing Industries |
| **Rheo040** | Clay Dispersions: Physical Chemistry And Applications |
| **Rheo325** | Tim's Top Tips - How to Measure Yield Stress for Mining Industries |
| **Rheo327** | Tim's Top Tips - How to Measure Flow and Viscosity Curves fro Mining Industries |
| **Rheo329** | Tim's Top Tips - How to Measure Thixotropy for Mining Industries |

| Ref No. | Title |
|---|---|
| **RF-010802-FR-01** | Practical Determination of the Pasty Sewage Sludge Flow Curve on the Basis of the Main Interactions Characterisation |
| **RF-030902-SI-01** | On New Approach to Rheological Modelling of an Electrostatic Ash and Water Mixture – Quadratic Law |
| **RF-180902-IT-01** | Dynamic Master Curves of Polymer Modified Asphalt from Three Different Geometries |
| **RF-190902-ES-01** | Rheological Properties of Bitumen Modified with Polyethylene and Polyethylene Based Blends |
| **RF-200902-AU-01** | Continuous On-Line Rheometry for Industrial Slurries |
| **RF-210802-DE-01** | Rheological Characterisation of C-S-H |
| **RF-290802-BR-01** | A Novel Rheometer for Refractory Castables |
| **RF-290802-BR-02** | Wet-Shotcrete of Refractory Castables |
| **RF300702-AU-01** | The Rheological Properties of a Cooper Concentrate Slurry : From Surface Chemistry to Pipeline Transport |
| **V190E** | Strategic Highway Research Program (SHRP) and the Measurement of Bitumen with the Haake Rheometers RW1 And RV1 |
| **V225** | Rheological Characterisation of Asphalt Binders |
| **V229** | Solvent Trap and Double Cone System for Reproducible Results in Rheological Measurement of Low Viscous Volatile Fluids |

These articles may be requested direct from our website: http://www.rheologysolutions.com/articlerequest.html

Rheology Solutions

TECHNICAL NOTE: MINERAL SLURRIES I

# Slurry rheology and pipeline transport properties, an overview

*ABSTRACT*

**T.Kealy,**
*Technical Manager*
*Rheology Solutions Pty Ltd*

Slurry transport in the mining industry is a commonly used technique for moving partially and fully processed materials, and waste. Often this type of treatment is more economical and rapid than other transportation methods, such as those involving conveyor systems or haulage. Additionally, the materials on a mine-site are often slurried for processing, and pipeline transport is necessary.

However frequently utilised, efficient slurry transport still poses serious engineering problems through the properties of the slurry. These include, but are not limited to, particle settling, attrition, pipe/fitting/impeller wear, degradation of flocculated or friable solids, and the pumpability of the slurry. In addition, the effects of these challenges can be exacerbated, or reduced by process or environmental variables, such as temperature, pH or solids loading.

In-transit particle settling leads to stratified flow, which in turn can cause uneven and excessive wear in the transport system, and in extreme cases, pipeline blockage due to solids build-up around fittings or inclined sections. Particle attrition has several drawbacks. Firstly, the product before the pump and pipe is not identical to that afterwards if the particles are friable, this may be a QC matter both for disposal and in-process. Secondly, changes in particle size distribution may affect the ability of the particles to remain suspended in the carrier fluid. Problems with the pumpability of slurries potentially include the fact that they often behave like a solid, eg when at rest, making it expensive to initiate pumping. Many fluids, including slurries have flow properties which depend on the 'rate of deformation' (analogous to their flow-rate).

Rheological techniques can help the engineer or technician design for and manipulate process variables. A range of instruments is available which measure the effects of solids loading, carrier fluid, particle size distribution and viscosity or pH modifiers on the propensity of particulate matter to flocculate, be suspended, settle etc through a knowledge of the characteristic flow properties of the slurry These rheometers and viscometers allow the engineer to directly measure and assess the causes and effects listed above. Physical quantities such as yield stress (the minimum force required for a slurry to flow), plastic viscosity (how 'runny' a slurry will be at a given laminar flow-rate), hysteresis (the changes in viscosity and/or yield stress which are due, usually, to particle attrition or settling) can be better predicted with the appropriate equipment.

Sensitive, high precision versatile equipment is available for repeatable and reliable measurement of all flow properties in the laboratory, and durable, precise, robust units for in the field use are also commercially available. These units have been shown to be of value for both QC and product development.

The full technical note, *"Mineral Slurries I: Slurry Rheology and pipeline transport properties, an overview"*, is available by request.

*Ref: Rheo 013TP*

Rheology Solutions

TECHNICAL NOTE: MINERAL SLURRIES II

# Overview of rheology-based process challenges for the mineral processing industries

*ABSTRACT*

**T.Kealy,**
*Technical Manager*
*Rheology Solutions Pty Ltd*

Mineral processing involves the transportation and processing of large quantities of materials. Combining solid materials with a carrier fluid (usually water) to create a slurry has long been popular in the industry, principally due to the increased efficiency and alacrity of mineral processing steps through use of a slurry, since the finely ground particles afford greater surface area exposure to the extracting medium. Also, the ease with which the particulate matter can be processed in this form is important for unit processes including grinding, classification, separation processes (settling, thickening, screening, filtration) and transport processes like pump/gravity flow through pipes and launders, mixing, etc.

Slurry characteristics pose many engineering challenges. These characteristics include particle settling, pH, bulk/carrier fluid viscosity, particulate flocculation or dispersion, attrition, pipe/fitting/impeller wear, degradation of flocculated or friable solids and the pumpability of the slurry. The effects of these challenges can be further altered by process or environmental variables such as temperature or solids loading.

Wet communition and classification can be effected by viscosity, particle size distribution, fines concentration etc. For example, hydrocyclone classification is effected by the presence of a yield stress (the minimum force required for a slurry to flow). Often, cut point increases and efficiency decreases with increasing yield stress. Separation processes are influenced by inter-particle attraction and viscosity (how easily the fluid flows once it is in motion). These variables may be manipulated to through the addition of modifying agents to the slurry. The key effects of these additions should be monitored through changes in the rheological parameters of the slurry, which are directly related to process performance. In-transit particle settling causes uneven and excessive wear or complete blockage in the transport system. Particle attrition may be a QC matter both for disposal and in-process and, changes in particle size distribution may affect the ability of the particles to remain suspended. Problems with the pumpability of slurries include the high cost of initiating and continuing pumping of fluids with high yield stresses or viscosities.

Rheological techniques can help assess process design and manipulation processes. A range of instruments is available to measure the rheological effects, through knowledge of the characteristic flow properties of the slurry. These rheometers allow the engineer to directly measure and assess the causes and effects listed above. Physical quantities such as yield stress, plastic viscosity and hysteresis (the changes in plastic viscosity and/or yield stress which are due, usually, to particle attrition or settling) can be quantified and predicted with the appropriate equipment.

Sensitive, high precision versatile equipment is available for repeatable and reliable measurement of all flow properties in the laboratory, and durable, precise, robust units for in the field use are also commercially available. These units have been shown to be of value for both QC and product development.

The full technical note, *"Mineral Slurries II: Overview of rheology-based process challenges for the mineral processing industries"*, is available by request.

*Ref: Rheo 014TP*

Rheology Solutions

# Applications Laboratory Instruments, Liquid Testing

*(as at July 2010)*

| Instrument: | CaBER1 | RS6000 | RS150 | RS80 | VT550 | VT6/7 |
|---|---|---|---|---|---|---|
| **Measurement Technique:** | | | | | | |
| Controlled Rate (CR) measurement | NO | YES | YES | YES | YES | YES |
| Controlled Stress (CS) measurement | NO | YES | YES | YES | NO | NO |
| Step Strain (Extensional) measurement | YES | NO | NO | NO | NO | NO |

**Commentary**
The CaBER1 is a capillary break-up extensional rheometer. CS measurements allow a variety of tests to be performed, which are not possible on CR units, these include measurement of G' and G'', and complex viscosity, but also the most precise yield stress measurements can be made using CS measurements only.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Measuring Geometries:** | | | | | | |
| Plate & Plate* | YES | YES | YES | YES | YES* | NO |
| Cone & Plate* | NO | YES | YES | YES | YES* | NO |
| Cup & Bob | NO | YES | YES | YES | YES | NO |
| Vane | NO | YES | YES | YES | YES | NO |
| ASTM D4287-88 | NO | NO | NO | NO | NO | YES |
| Capillary | NO | NO | NO | NO | NO | YES |

**Commentary**
(*) VT550: Extra fixtures are required, and computer controlled closing of the geometry is not possible.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Test Types:** | | | | | | |
| Oscillatory Tests | NO | YES | YES | YES | NO | NO |

**Commentary**
Oscillatory tests allow a range of amplitudes and/or frequencies of oscillation, for both destructive and non-destructive testing.

| | | | | | | |
|---|---|---|---|---|---|---|
| Rotational Tests | NO | YES | YES | YES | YES | YES |
| Creep/Recovery* | NO | YES | YES | YES | NO | NO |
| Extensional Tests | YES | NO | NO | NO | NO | NO |

**Commentary**
* This measures the extent of, and time taken for, structural recovery to be measured.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Information:** | | | | | | |
| Yield Stress | NO | YES | YES | YES | YES | NO |
| Thixotropy | YES | YES | YES | YES | YES | NO |
| Flow Curve* | NO | YES | YES | YES | YES | NO |
| Viscosity Curve* | YES | YES | YES | YES | YES | NO |
| Elastic Modulus, G' # | NO | YES | YES | YES | NO | NO |
| Viscous Modulus, G'' # | NO | YES | YES | YES | NO | NO |

Rheology Solutions

**Commentary**

(*) VT6 and VT7 are ASTM D4287-88 units, they can only measure 'true' viscosity or flow curves for Newtonian fluids. Non-Newtonian fluids give comparative data only. The CaBER 1 measures apparent extensional viscosity, not shear viscosity as measured by rotational instruments.

(#) G' & G'' are critical for measuring structural changes over time, eg gelation/decomposition, without disturbing the internal structure of the sample.

| **Instrument:** | **CaBER1** | **RS6000** | **RS150** | **RS80** | **VT550** | **VT6/7** |
|---|---|---|---|---|---|---|
| **Useful for:** | | | | | | |
| QA/QC | YES | YES | YES | YES | YES | YES |
| R&D | YES | YES | YES | YES | NO | NO |

**Commentary**

The rotational instruments are documented in order of decreasing sensitivity and operating window size.
The RS6000 is the most sensitive of these instruments with the largest operating window. The VT6/7 is the least sensitive of these instruments with the smallest operating window.

| | | | | | | |
|---|---|---|---|---|---|---|
| Portable | NO | NO | NO | NO | YES | YES |

**Commentary**

RS6000 and RS150 weigh 40kg, VT550 and VT6/7 are portable on their own, but refrigerated circulator & lap-top are recommended for all units.

| **Other:** | | | | | | |
|---|---|---|---|---|---|---|
| Precision* | HIGH | VERY HIGH | VERY HIGH | HIGH/ MODERATE | MODERATE | LOW |
| Temperature Control necessary | YES | YES | YES | YES | YES | YES |
| Clean & Dry air necessary | NO | YES | YES | YES | NO | NO |
| Controlled closure of geometry# | YES | YES | YES | YES | NO | NO |

**Commentary**

(*) The RS6000, RS150 and RS80 have air bearings, allowing higher sensitivity for all measurements.

(*) The VT550 has a mechanical bearing (low friction), but not essentially frictionless like RS units.

(*) The VT6/7 have mechanical bearings (higher friction than the VT550).

(#) This feature is critical to reduce the disturbance to the sample, and to help repeatablility since manual closure of the gap for thixotropic fluids results in variable initial strain on the sample.

**KEY:**

The equipment in the applications laboratory is a combination of last and current generation viscometers and rheometers. These instruments are widely in use for R & D through to QA & QC applications.

The CaBER 1 Capillary Break-Up Extensional Rheometer measures extensional properties which govern filling, spatter, misting, fibre spinning and other processes, which have an elongational or extensional component.

The RheoStress (RS) 80, 150 and 6000 controlled stress rotational rheometers measure shear and dynamic properties which govern pumping, stirring and other processes where the acting forces are shearing the fluid.

The ViscoTester (VT) 550 and 6/7 viscometers measure shear properties only, which govern the viscous part of pumping, stirring and other processes where shearing forces act on the fluid.

Rheology Solutions

# Contract Testing Request Form

Date: ☐ Confidentiality Agreement Required ☐ Yes ☐ No

Name:

Company:

Phone Number: Area Code: State:

Email Address:

## REASONS FOR TESTING

☐ Sample Characterisation

☐ Process Development / Problems

☐ Other:

## INFORMATION WILL BE USED BY

☐ QA

☐ R&D

☐ Productions

## PROCESS INFORMATION

If there is a problem, how does it manifest itself?

*(Please provide basic process details before, during and after point of detection)*

.....

.....

.....

.....

.....

## SAMPLE INFORMATION

Samples Name / ID:

No. of Samples:

Corrosive: ☐ Yes ☐ No Toxic: ☐ Yes ☐ No

pH:

Particle Size Distribution:

Concentration *(solids / polymer / ionic etc.)*:

Other:

Is an MSDS Sheet included for each different sample? ☐ Yes ☐ No

Special Disposal Requirements? ☐ Yes ☐ No

If Yes, Details:

RHEO114

Samples Name / ID:

Sample Handling / Storage: *(eg. refrigeration, temperature, mixing, shelf life, air tight etc.)*

Sample Preparation for Testing: *(eg: pH, mixing, other additives, ingredients, temperature etc.)*

Cleaning Requirements: *(eg: solvent, detergent, water etc.)*

## CURRENT TESTING PROCEDURES:

Is there an existing test procedure available? ☐ Yes ☐ No

Is a copy of the test procedure attached? ☐ Yes ☐ No

Are test results for this product attached? ☐ Yes ☐ No

## TESTING / RESULTS REQUIRED:

## DISSEMINATION OF RESULTS:

☐ Data Only ☐ Interpretation & Recommendations

☐ Data & Interpretation ☐ Other eg: Presentation

## COMMENTS:

**NOTE:**
We will advise within 48 hours of receipt of this form if further information is required. Additionally, we will provide an overview of the work we would carry out including an estimate of the projected time scale and associated fee. Any costs associated with special sample disposal requirements will be paid and arranged by the client.

Customer Signature:

Request Submitted by:

**We suggest you submit this form by fax 03 5367 6477**

RHEO114

Rheology Solutions

# Sample Testing Request Form

Date: ☐ Confidentiality Agreement Required ☐ Yes ☐ No

Name:

Company:

Phone Number: Area Code: State:

Email Address:

## DATE REQUIRED BY

☐ Urgent - 1 Week ☐ Low Priority - 3 Weeks

☐ High Priority - 2 Weeks ☐ Other:

## REASONS FOR TESTING

☐ Instrument Evaluation / Recommendation

☐ Other:

## INFORMATION WILL BE USED BY

☐ QA

☐ R&D

☐ Productions

## PROCESS INFORMATION

If there is a problem, how does it manifest itself?

*(Please provide basic process details before, during and after point of detection)*

.....

.....

.....

.....

.....

## SAMPLE INFORMATION

Samples Name / ID:

No. of Samples:

Corrosive: ☐ Yes ☐ No Toxic: ☐ Yes ☐ No

pH:

Particle Size Distribution:

Concentration *(solids / polymer / ionic etc.)*:

RHEO115

Samples Name / ID:

Other:

Is an MSDS Sheet included for each different sample? ☐ Yes ☐ No

Special Disposal Requirements? ☐ Yes ☐ No

If Yes, Details:

Sample Handling / Storage: *(eg. refrigeration, temperature, mixing, shelf life, air tight etc.)*

Sample Preparation for Testing: *(eg: pH, mixing, other additives, ingredients, temperature etc.)*

Cleaning Requirements: *(eg: solvent, detergent, water etc.)*

## CURRENT TESTING PROCEDURES:

Is there an existing test procedure available? ☐ Yes ☐ No

Is a copy of the test procedure attached? ☐ Yes ☐ No

Are test results for this product attached? ☐ Yes ☐ No

## DISSEMINATION OF RESULTS:

- ☐ Data Only
- ☐ Data & Interpretation
- ☐ Report to Customer
- ☐ Report to State Distributor/Office
- ☐ Interpretation & Recommendations
- ☐ Other eg: Presentation
- ☐ PDF of Report
- ☐ Hard Copy of Report

## COMMENTS:

.....

.....

.....

.....

.....

**NOTE:**

We will advise within 48 hours of receipt of this form if further information is required. Additionally, we will provide an overview of the work we would carry out including an estimate of the projected time scale and associated fee. Any costs associated with special sample disposal requirements will be paid and arranged by the client.

Customer Signature:

Request Submitted by:

**We suggest you submit this form by fax 03 5367 6477**

RHEO115