1. Introduction

The Rapid Visco Analyser is a unique tool for product development, quality and process control and quality assurance.

The RVA is a cooking, stirring viscometer with ramped temperature and variable shear capability optimized for testing the viscous properties of starch, grain, flour and foods. The instrument will analyse as little as two or three grams of sample using international standard methods or your own tailor-made test routines of mixing, measuring, heating and cooling.

Applications include: flour and grain quality, native starches, modified starches and starchy samples, formulated foods (eg. sauce, ketchup, gravy, dressing, mayonnaise, soup, dairy beverages) other ingredients and foods (eg. hydrocolloids & proteins), cooked and extruded foods (eg ready to eat breakfast cereals, snack foods, pet foods, fish feeds and animal feeds), meltability tests (eg process cheese, chocolate and confectionery) and “Miniature Pilot Plant” small scale process emulation.

2. Features and Benefits

Rapid Visco Analyser:

- Viscosity Range to suit your samples: mid viscosity range for most samples (RVA-TecMaster), optimized for low viscosity samples (RVA-Super4), extended viscosity range for melt tests (RVA-4), and mid range with four preconfigured methods for routine samples (RVA-StarchMaster2).
- Rapid Viscosity Profile: Standard starch pasting test in 13 minutes.
- Easy to Use: Automated operation of RVA-Super4, RVA-4 and RVA-TecMaster using Thermocline for Windows – 3 (TCW3) minimizes training and ensures reliability.
- Stand-alone option: Preconfigured RVA-StarchMaster2 operates simply; no computer required; no software to learn.
- Calibration: Check with traceable standards to comply with ISO9000 and Quality System requirements.
- Glass-free: Safe for food manufacturing areas.
- Relevant: Tailor test routines to emulate processing conditions in industry.

Thermocline for Windows (TCW) Software:

- Programmable Instrument Control: “Profile” style method set up with advanced options and auto functions for flexibility and ease of use.
- Flexible Data Analysis: Auto functions for commonly derived parameters and advanced functions for research.
- Real Time Graph Display: Interactive and overlay functions for clarity.
- Single Page Report: Traceability data, results and the graph all on a single page.
- Traceability: complies with ER/ES (electronic records/electronic signatures) requirements for data security.

3. Applications

- Starches and Starchy Samples:
  - Native and modified starches of grains, roots, tubers and others.
- Hydrocolloids:
  - Gelling/thickening profile, hydration profile, preparation of samples that will gel.
- Proteins: Soy products, milk proteins, gluten, gelatin and egg whites.
- Milling and Baking: Grain soundness and bug damage, starch pasting quality for cakes, breads, batters, pasta and noodles, flour amyrase, malt amyrase, fungal amyrase, anti-staing, heat treatment of flour, wheat gluten quality and solvent retention capacity test.
- Barley – Malting – Brewing: Predicting safe storage life for malting barley, rapid recording mashing system (and the effect of addition of enzymes, adjuncts and chemicals to malts), monitoring the progression of malting, predicting barley malting quality and simulated industrial mashing process.
- Dairy: Process cheese manufacture and meltability, effect of drying temperature on milk protein powders, rennet caseinate rehydration, dairy beverages, custard, age thickening of sweetened condensed milk and “Miniature Pilot Plant” small scale manufacture of yoghurt, ice cream mix and dairy desserts.
- Formulated foods: Low viscosity products (premixes & ready to use) such as sauce, ketchup, gravy, dressing, mayonnaise, soup, other low viscosity foods with starches, hydrocolloids & proteins, melt tests such as chocolate and confectionery and “Miniature Pilot Plant” small scale emulation of manufacturing conditions.
- Extruded and Cooked Foods Ready to eat breakfast cereals, snack foods, pet foods, aqua feeds and animal feeds.
4. Models and Accessories

Perten Instruments offers a range of Rapid Visco Analyzer models and accessories to suit your needs. The RVA-Super4, RVA-4 and RVA-TecMaster combine speed, precision, flexibility and automation with Thermocline software for Windows - 3 (TCW3) software for viscometric data acquisition and analysis.

The RVA-StarchMaster2 offers the same speed and precision with simple stand alone operation. The RVA-StarchMaster2 is ideal for routine testing, process and quality control.

- **RVA-Super4**

  The best choice for analyzing low viscosity samples (down to 10 cP at 160 rpm) because of its exceptional sensitivity and accuracy.

  Low viscosity applications include: low solids starches (eg. ethylated & cationic starch for paper & packaging), low viscosity food starch (eg. acid/ enzyme thinned), low viscosity products (eg. sauce, ketchup, gravy, dressing, mayonnaise, soup, dairy beverages) and other low viscosity non starch foods (eg. with hydrocolloids & proteins).

- **RVA-4**

  The best choice when you need the widest viscosity range (up to 25,000 cP at 160 rpm) because of its powerful stirring motor.

  High viscosity applications include: extruded and cooked foods (eg ready to eat breakfast cereals, snack foods, pet foods, fish feeds and animal feeds), meltability tests (eg process cheese, chocolate and confectionery) and high solids and high viscosity modified starches (eg substituted and crosslinked cook up food starches).

- **RVA-TecMaster**

  A fully featured viscometer for analyzing most samples. It covers the mid viscosity range (20 - 6,000 cP at 160 rpm).

  General purpose applications include: starches and starchy samples, hydrocolloids, proteins, formulated, cooked and extruded foods and "Miniature Pilot Plant" small scale process emulation.

- **RVA-StarchMaster2**

  The easy to operate, stand alone (no computer or software required), economical viscometer for routine analysis of most samples. It covers the mid viscosity range (20 - 6,000 cP at 160 rpm).

  Routine applications include: starches and starchy samples, hydrocolloids, proteins, formulated, cooked and extruded foods, flour and grain quality.

- **Sample cans & stirring paddles**

  Box of 200 cans and paddles in dispenser box for convenient storage and access.

- **Calibration check starch**

  Standard test starch ensures that the RVA is operating within specifications in compliance with the principles of Good Laboratory Practice. The test starch is supplied in sachets to maximise shelf life and for convenient storage. (Pack of ten for small users, and a more economical pack of 50.)