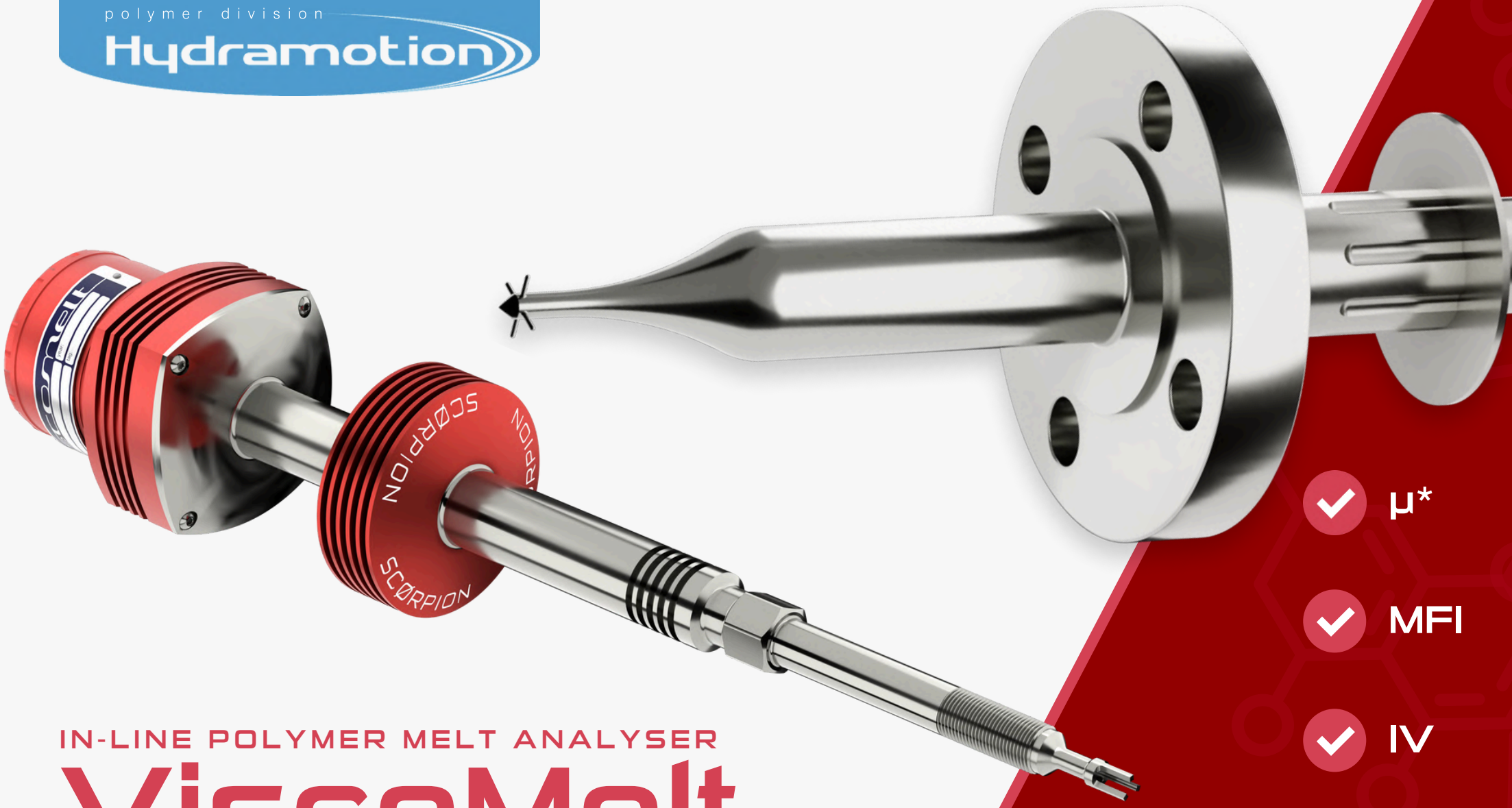
polymer division
Hydramotion




- μ*
- MFI
- IV

IN-LINE POLYMER MELT ANALYSER

# ViscoMelt

Lab-grade polymer viscosity. Inline. Without the lab.

POWERED BY

SCØRPION™

melt flow technology

# REAL TIME MELT DATA
# AT YOUR FINGERTIPS

One simple device does it all.

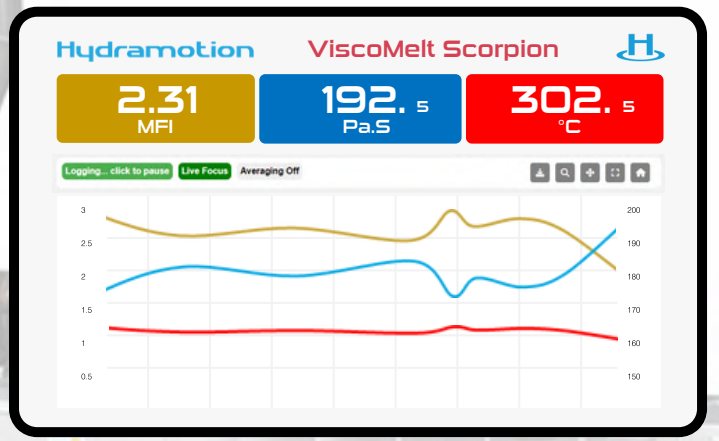
- μ*
- MFI
- IV

**No sampling**

**No offline measurements**

**No labour costs**

HI-VIZ Display







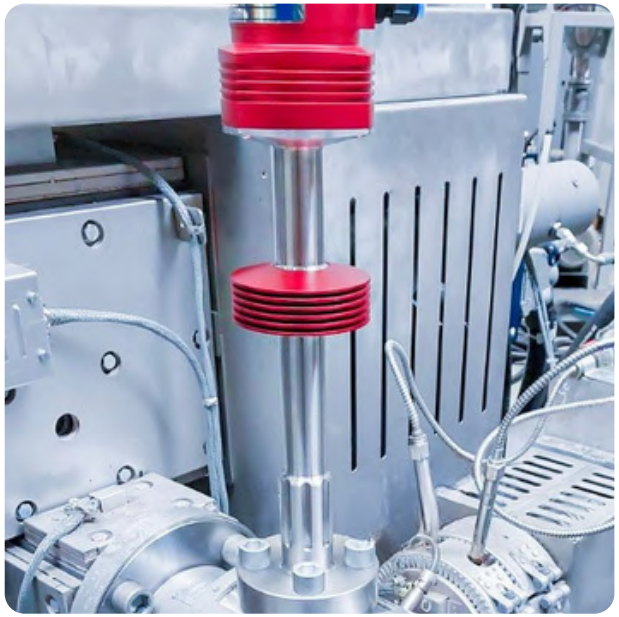
From simple local display
to full automation.

# THE CONTROL YOU NEED.
# WHERE YOU NEED IT.

- μ*
- MFI
- IV

ViscoMelt's robust design and flexible installation options ensure it delivers real time measurement and control exactly where it's needed most. Live melt viscosity readings from day one, with no fuss, for a lifetime.

Extruder
VM5

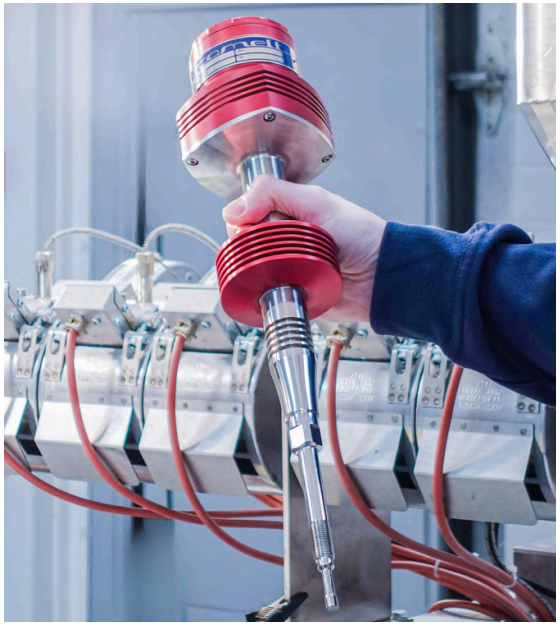


Melt Pipe
VM7

Tank
VM9

# WHY CHOOSE VISCOMELT?

**Affordable:** fraction of the cost of capillary systems
**No maintenance:** negligible cost of ownership
**Fast:** real time viscosity every 5 secs - 99% faster than lab
**Deploy anywhere:** forget site disruption and costly installation
**The all-in-one solution:** viscosity, MFI, IV and temperature




ⓘ Forget about heavy, slow, expensive mechanical devices

## 3 daily profit drivers $$$

### Increase Quality

Achieve end-product consistency and quality by detecting raw material variability in real-time and proactively take action during production

### Eliminate Waste

Slash defect and scrap rate by instantly detecting off-spec product. Adjust the process in real-time to bring the material back into spec

### Transform Productivity

Reduce reliance on manual offline measurements. Automate your polymer measurement and control

# MEET THE VISCOMELT FAMILY

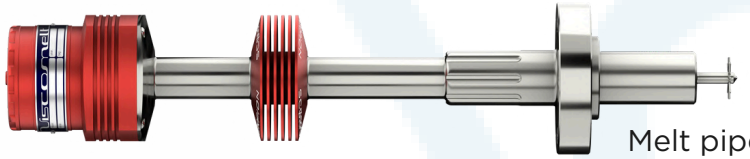
## Powered by Scorpion™ technology

ViscoMelt is a family of highly-resilient inline viscometers which provide critical melt flow data every few seconds with exceptional repeatability. The Inconel-tipped spike design can withstand the extreme process conditions of high temperature, pressure, and viscosity. And its solid-state design means no maintenance, no on-site calibration and no costly site alterations.

VM5

Extruder

VM7



Melt pipe or tank

VM9

Extended reach melt pipe or tank

POWER.
SPEED.
PRECISION.

**5** SECONDS
PER READING

**$10^6$** Pa.s
VISCOSITY

**700** BAR
OR 10,000 PSI
PRESSURE

**350** °C
OR 662°F
TEMPERATURE

**0.5** WATT
POWER CONSUMPTION

# ViscoMelt 5

## EYES IN THE EXTRUDER

**1.3** kg
weight

**M18**
port

**25** mm
min bore

The super compact one. VM5's footprint is ideally suited to the tight spaces of the **extruder** and fits standard thread ports. Upgrade a thermometer to a melt viscometer. It's that easy.

The ViscoMelt's inconel monopole spikes sit **directly in the heart of the flow**. The beautifully compact design allows melts to flow freely over the sensor surface, with an instantaneous response upon fluid contact.

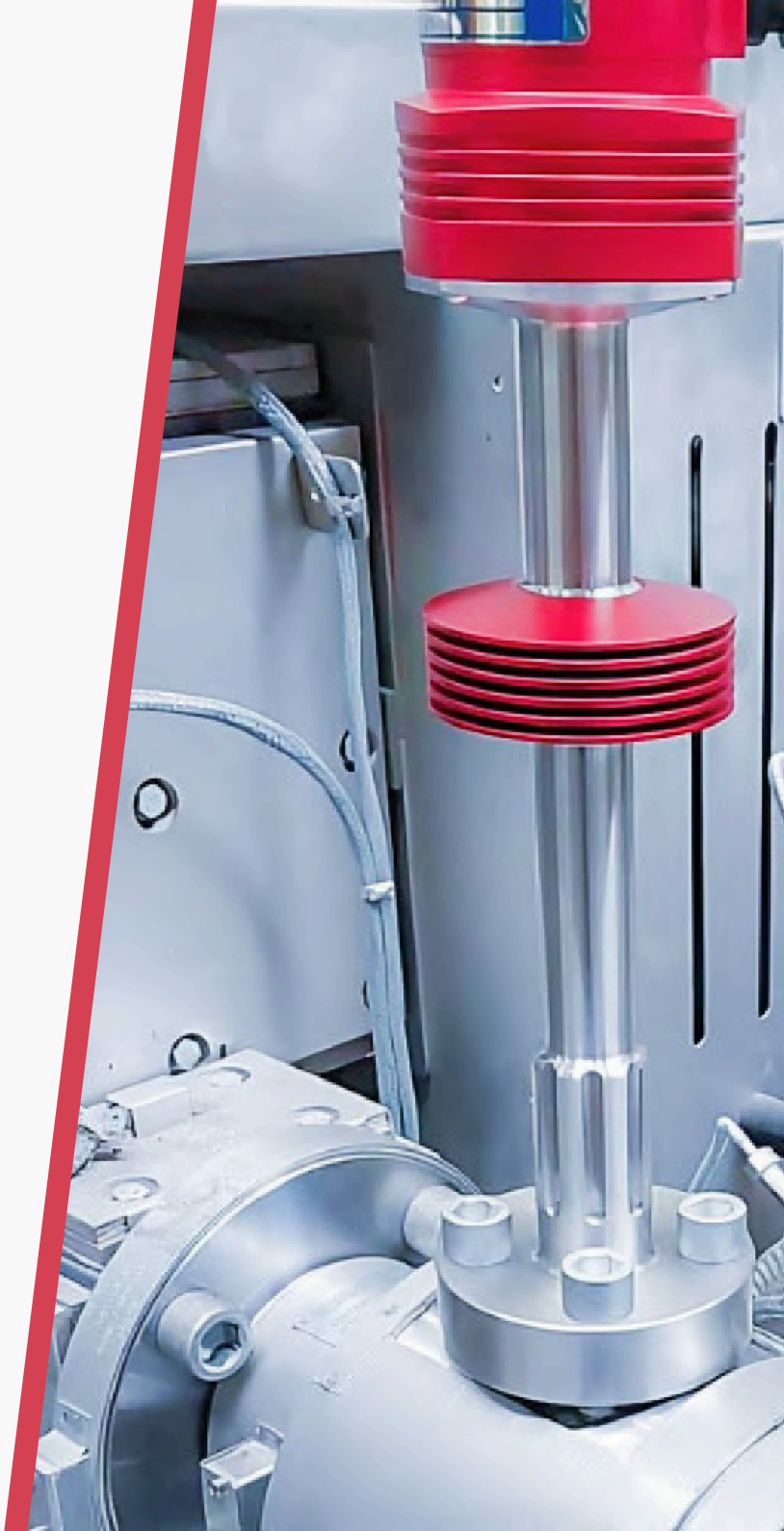

# ViscoMelt 7

## MELT PIPE EASY-FIT

| 3.3 kg | ANY | 25 mm |
|---|---|---|
| weight | fitting | min bore |

The most important place to measure melt viscosity is at the heart of the flow in the middle of the pipe, at full line temperature and pressure.

The VM7 does just that.  All the action happens at the Scorpion tip: just place the sensor where you need it, in any size pipe or tank.

# ViscoMelt 9

## EXTENDED REACH

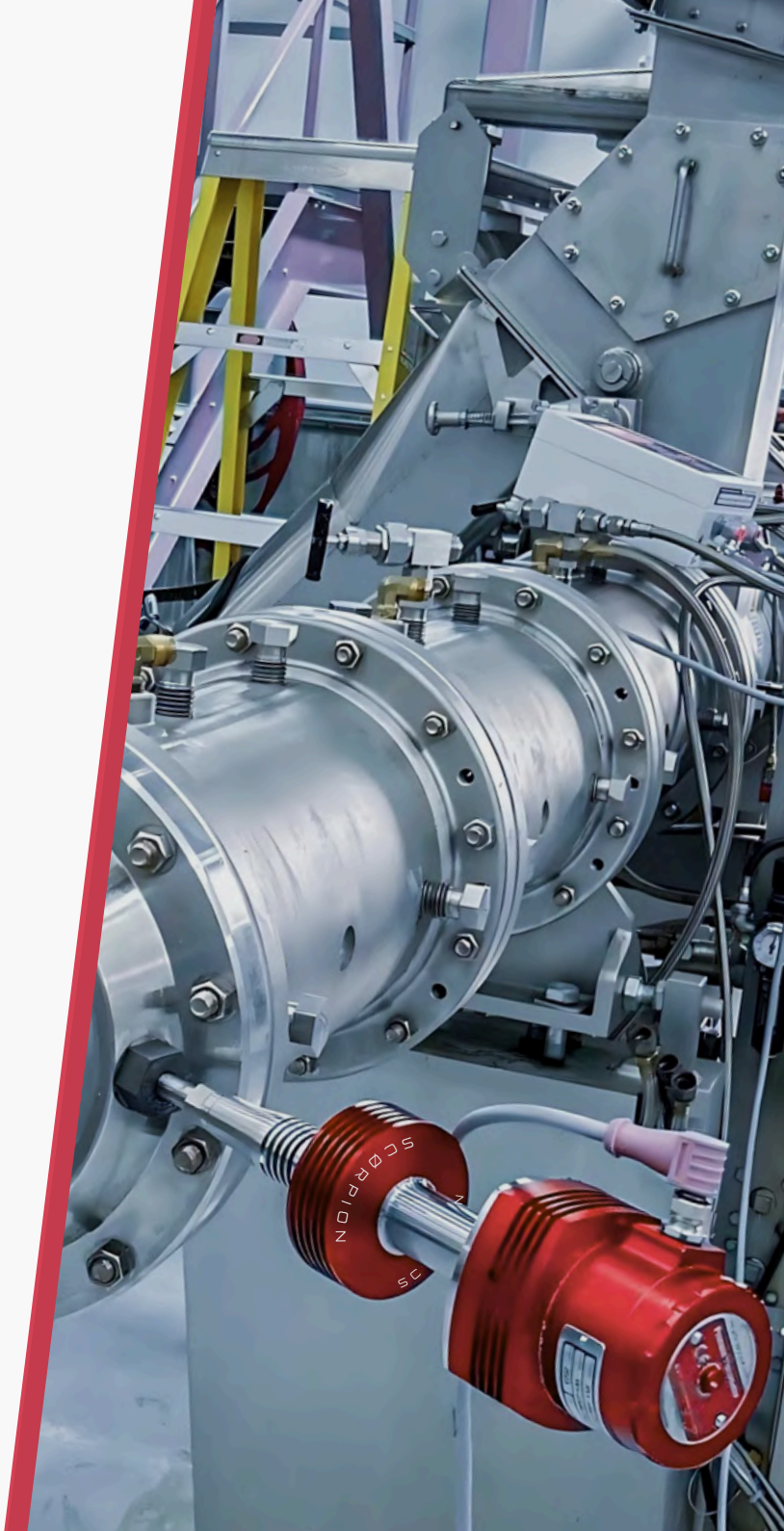
**ANY** length

**ANY** fitting

**ANY** bore

Pipelines and tanks come in all shapes and sizes, and fluid levels can vary enormously. The VM9 can be made to almost any length to suit your existing installation. Deep reach into the fluid, extended tees, and thermal lagging for heat retention can all be easily accommodated.

The result is an instrument that is hugely fit for purpose and can be fitted to your tank or pipe straight from the box. We do the work for you to minimise site disruption, and cost.

# ONE SOLUTION

## FOR THE WHOLE POLYMER JOURNEY

PP | HDPE | LDPE | LLDPE | PET | PS | ABS | PVC | PA6 | PA66 | EVA | TPE | PC

ViscoMelt works right across the value chain delivering melt flow data for all thermoplastics, across every stage of production, manufacture and reuse.

### Production

Batch consistency. Process efficiency.
Polymerisation.

### Manufacture

Product uniformity. Defect reduction.
Energy efficiency.

### Recycling

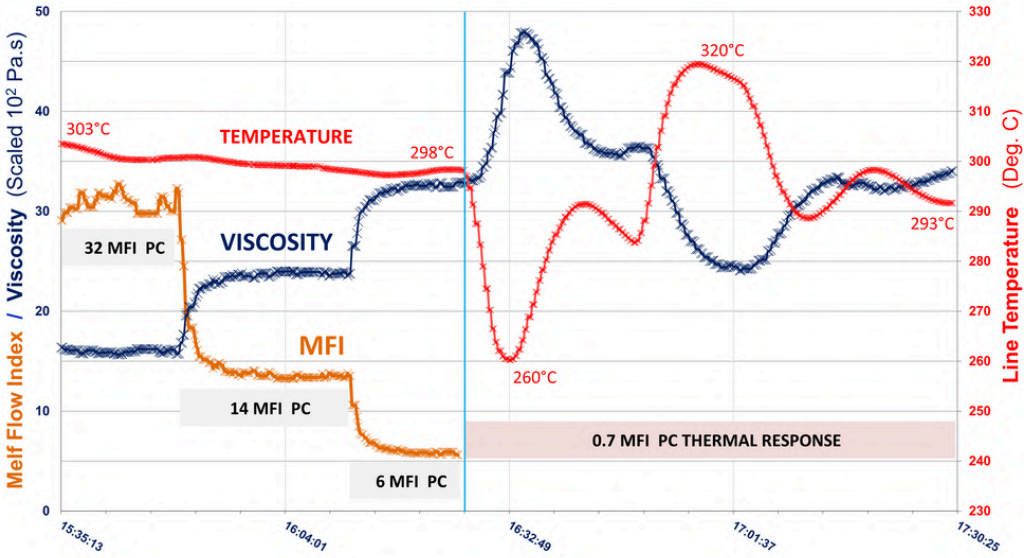
Feedstock analysis. Blend ratio.
Final material quality assurance.

# VISCOMELT IN ACTION

## LAB PRECISION

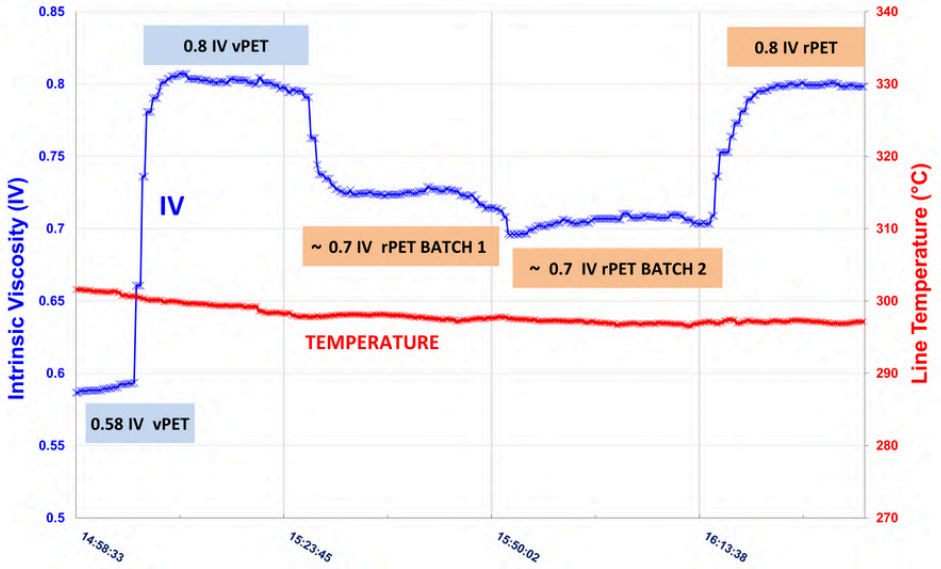
## AT LINE CONDITIONS

### Polycarbonate: VM5 in extruder MFI




Real time ViscoMelt MFI and Viscosity for 3 grades of polycarbonate (PC) under continuous extruder flow with viscosity response under extruder temperature modulation

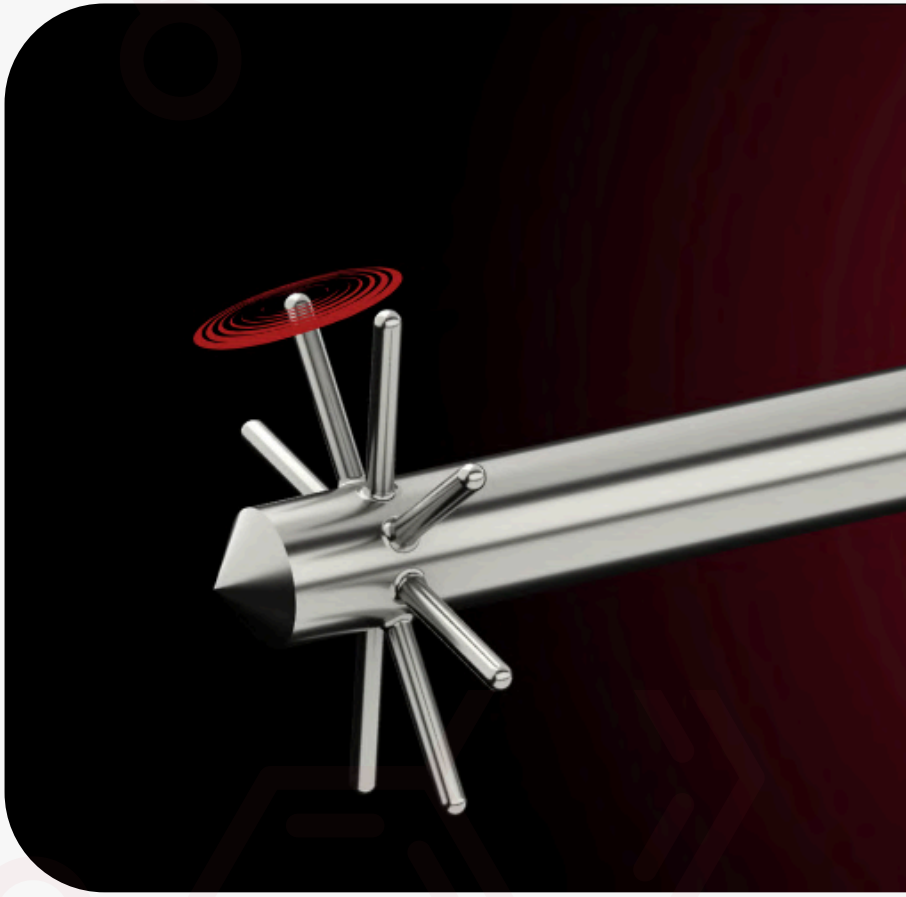
### vPET & rPET: VM7 in melt pipe IV




Real time ViscoMelt IV for Virgin PET (vPET) and Recycled PET (rPET) under continuous flow

# MAKING WAVES

## HOW SCORPION™ WORKS



The stainless steel alloy base resonator with its Scorpion tip is immersed in the flow of the polymer melt at full process operating temperature and pressure.

The Scorpion spike radiators at the tip are made to microscopically propagate radial waves into the polymer melt.

Radial propagation is strongly and predictably influenced by both polymer viscosity and elasticity which then alters the harmonic behaviour of the base resonator.

Viscosity and elasticity are simultaneously measured by ViscoMelt head electronics and related directly to molecular weight, melt flow index and intrinsic viscosity (IV).

- μ*
- MFI
- IV

# ADVANCED
# MANUFACTURING

A place where modern production systems meet a culture of high engineering values. The ISO9001 accredited facilities foster a mindset based on relentless attention to detail to ensure every instrument performs as it should and is worthy of the Hydramotion name.

Our digital machining facilities are some of the most advanced in the world. State of the art welding systems means we can create a world class viscometer solution that delivers the quality, integrity and finish that meets the challenging demands of process industries.

When you purchase from Hydramotion you are buying into a proven track record of assured quality that the world has come to expect. Every product meets our exacting standards which will ensure a lifetime of reliable service and provide a highly rewarding customer experience. Our reputation is built on it.

CE Ex ISO9001 CERTIFIED SIRA CERT: 9905111 IECEx Member of The BPF British Plastics Federation MADE IN BRITAIN

**hydramotion.com**

All images and details provided should be used as a guide only and are subject to change at the manufacturer's discretion. For full information and specification please contact Hydramotion

version 1.01