

**“Invaluable instrument  
in pharmaceutical  
process development”**

*Principal Scientist MSD,  
Lead of Crystallization Lab*



**DESIGNED BY SCIENTISTS  
FOR SCIENTISTS**

**Crystal**  
16

# THE NEW INDUSTRY STANDARD

## Advanced temperature features

- Integrated air cooling with extended temperature range. -20 – 150°C with all 4 block reactors in parallel
- Chiller cooling also available -25 – 150°C with all 4 block reactors in parallel
- Advanced temperature accuracy 0.5°C

## State-of-the-art software

- New software with improved integrated research and analysis capabilities
- Flexible, intuitive, user-friendly software

## Ground-breaking transmissivity technology

Increased accuracy with improved particle detection at low and high concentrations.

## Feedback control

- Design your experiments with automated decision making
- Less time to automate your process; simplify nucleation time measurements

## Overhead and bottom stirring

- Top stirring specifically developed to overcome attrition issues
- Bottom stirring for your most simple experiments

PRODUCT SHEET CRYSTAL16

**Technobis**  
CRYSTALLIZATION SYSTEMS

## The NEW standard

Designed by scientists for scientists and used for more than 17 years by more than 600 customers, the **Crystal16** is the user-friendly multi-reactor benchtop system with simple, user friendly and flexible software to perform medium through-put crystallization studies at 1 mL scale. One **Crystal16** can hold up to 16 standard HPLC vials. The integrated transmissivity technology allows simple generation of phase diagrams ideal for a wide range of industries including pharmaceutical, chemical and agro-chemical companies.



**“Mandatory for any physical chemistry or solid state lab!”**

PhD student UC Louvain



## Induction time measurements and crystallization

The **Crystal16** has made kinetic nucleation studies accessible and easy to perform, by automating the collection of induction times for several samples simultaneously.

- Measure theoretical approximations - determine experimentally the nucleation rate of any crystallization system
- The 'Crystal16 method' for determining nucleation rates from induction times



**“The user friendly Crystal16 enables me to rapidly acquire large datasets on solubility, MSZW's and induction times.”**

Project Leader at Ardena

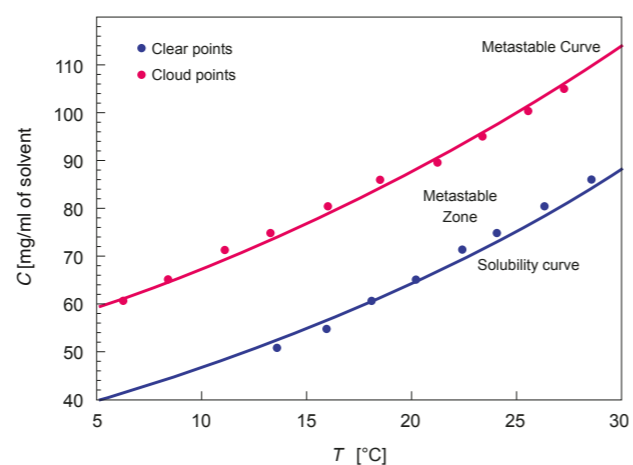
## Temperature dependent solubility curves have never been easier

The **Crystal16** combines automation with integrated transmissivity technology allowing the scientist to easily determine clear and cloud points resulting in solubility data and metastable zone width (MSZW) at an early stage. The **Crystal16** can quite simply generate solubility curves for four solvents in 4 hours with less than 100 mg of material.

The increased accuracy of temperature control and the integrated transmissivity technology resulted in improved particle detection at low and high concentrations.

- 4 solubility curves in 4 hours
- Enabling the polythermal solubility method
- Obtain both solubility curve and MSZW information simultaneously
- Design crystallization process quickly

Solubility of Cloxacillin Benzathine in pure solvents



**“Expedited solubility curve development”**

Manager Crystallization & Chromatography Tech at ADM

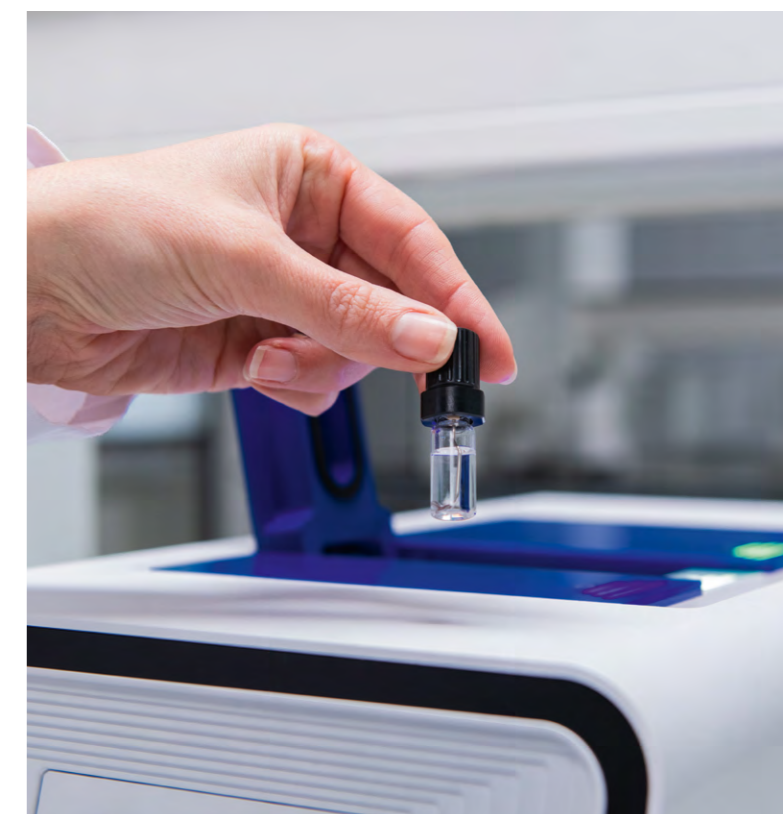
**“A thorough understanding of solubility is the key to process crystallization design. The Crystal16 is an essential tool in rapidly measuring the solubility of solids in various solvents as a function of temperature and hence is an invaluable instrument in pharmaceutical process development.”**

Principal Scientist MSD, Lead of Crystallization Lab



## A powerful system for polymorph, salt & co-crystallization research

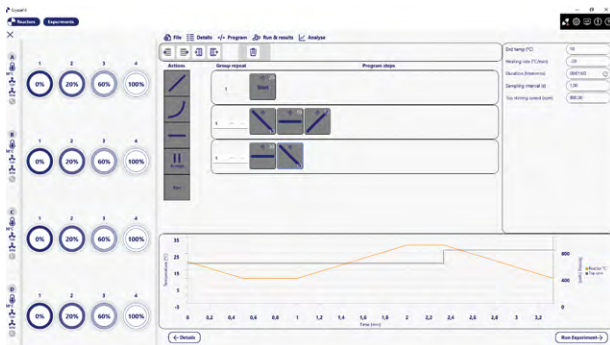
The **Crystal16** is a powerful system to simply use for polymorphism, salt or co-crystal formation. Using 16 parallel reactors, you can test a wide diversity of crystallization conditions such as solvents and solvent mixtures, compound concentrations, counter-ions, temperature profiles.





## State-of-the-art software

The new software with improved research and analysis capabilities is flexible, intuitive, and user-friendly. Now you can perform your experiments and analyse data simultaneously in the same environment. This is your all-round software!



Screenshot of the Crystal16 software

## Specifications *Crystal16*

<b>Reactors</b>	16
<b>Reactor type</b>	Commercially available, glass
<b>Optimal work volume (mL)</b>	0.5 to 1.0
<b>Temperature zones</b>	4
<b>Temperature Range (°C)</b>	-20 to 150
<b>T ambient 20°C +2°C</b>	all 4 block reactors in parallel
<b>Temperature accuracy (°C)</b>	0.5
<b>Heating rate (°C/min)</b>	0 - 20
<b>Cooling rate (°C/min)</b>	0 - 20
<b>Stirring</b>	Overhead or stirrer bar
<b>Stirring speed (rpm)</b>	0 - 1250
<b>Turbidity (%)</b>	Every reactor
<b>Chiller optional (°C)</b>	Required to achieve -25 to 150 in all 4 block reactors in parallel
<b>Data export</b>	CSV, Word Report, XML
<b>Footprint (DxWxH)</b>	50x28x18.5

## Technobis Crystallization Systems workflow



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