

# CALEVA MULTI LAB (CML) THREE IN ONE ON THE BENCH-TOP

## PRODUCT OPTIONS TO HELP YOU ACHIEVE MORE .....



### ✓ Support and advice options.....

Is Caleva able to offer advice about the products that I should obtain to achieve my established objectives?

Development and production equipment is normally a significant purchase that should be suitable for what you want to do for several years into the future. It is important that the right decisions are taken before the equipment purchases are decided.

For many purchasers, the technology that they are investing into is relatively new and may not well known. In these cases the time to obtain advice is before the purchase decisions are made.

We at caleva have been making pellets and extrudates for about 50 years. If you will share with us what you are trying to achieve then we would be in a good position to share with you our experience. This should enable you to be confident that the equipment that you buy is appropriate for your project.

This support and advice should be used before purchase decisions are made and we will give this help free of charge.

Support

### ✓ Reduce your batch size.....

Can I work with smaller batch sizes with the CML if my product is very expensive or scarce?

For some applications where an increased in mixing power is needed (for example in the case of very stiff materials) then a smaller bowl might provide a solution. The smaller bowl has a batch size of about 10 to 20 grams (wet weight) and using smaller blades relatively provides more power to be applied to a smaller mixing surface. Mixing bowls can be used with or without inserts as required.

In the case of very scarce or expensive materials then a small bowl will help to run trials with smaller amounts of material.

Using 15 grams of material in the smaller mixing bowl will provide a sample that is still large enough to effectively use in the extruder and spheronizer.

Ask us about the reduced size mixing bowl and blade set.

Granulation

### ✓ Cool or heat the material in the bowl.....

My product is very sensitive to excessive heat or may not mix properly when cold.

Can I cool or heat the material in the CML mixing bowl during my trials?

Some experimental work might benefit from product that is either heated or cooled in the CML granulation or mixing bowl during the experimental process.

A water jacketed bowl suitable for heating or cooling can be offered with both the full size and the reduced

size bowls. A separate water bath and circulation pump will be necessary.

Caleva can also provide a heating and cooling water circulatory system if required, but most customers generally source this from their local supplier.

### ✓ Stiff or viscous material.....

My material is very viscous do you have options for a different blade configuration to work with these materials

For working with very "high viscosity" materials an advanced sigma blade blade has been designed. This allows a more viscous type of material to be effectively

mixed or granulated in the CML system. Contact us for details.



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## PRODUCT OPTIONS TO HELP YOU ACHIEVE MORE .....



Extrusion

Spheronization

### ✓ Pellets with different diameters.....

I want to make pellets of different sizes. How can I achieve this with the caleva CML?

The main factor in the determination of the pellet size is the diameter of the extrusion hole in the extruder die.

As a general rule, if the formulation is acceptable, then the size of the pellet will approximately have the same diameter as the hole. This can vary a little depending on the characteristics of the formulation but this is the factor that has the greatest influence on pellet size.

Caleva can offer dies with hole diameters from 0.5 mm to 3.0 mm in 0.1 mm increments. We can also offer die hole depth to diameter ration from 1: 1 to 4:1. The offers the user the unique ability to vary the density of the extrudate being produced by the extruder. The effects of this on any formulation cannot be predicted but unless you have dies that offer the ability to extrude at different density this cannot be tested.

Contact us for advice on the die hole configurations that you should consider.

### ✓ Increase the surface area of the extrudate.....

How can I increase the surface area of my extrudate as I need this for use as a catalyst.?

We can manufacture and supply a range of specialist "non- circular" die hole designs including dies with "tri-lobe" and "quad-lobe" hole shapes. These can be various designs and configurations

according to your requirements.

Contact us for a discussion if you have specific requirements.

### ✓ A recommended consumable item!

Are there any consumable items that you would advise me to purchase with the CML?

There is a small "bush" (washer) that sits on the end of the extruder screw. From experience we have found that where there are several operators it is possible to lose this "bush" during the cleaning.

process. They are not expensive and we generally recommend that it is better to optionally order 20 to 50 of as part of the initial purchase of the equipment. This should be enough for several years of careful use.

### ✓ I have very small or very large pellets.....

How can I be sure that the spheronization disc pattern is optimum for my pellets characteristics?

Different disc patterns are available for the spheronizer disc. Please contact us for details of the cross hatch and radial patterns that are available. The regular cross hatch cut pattern can be supplied with a pitch if from 1.0 to 3.0 mm as required as

options.

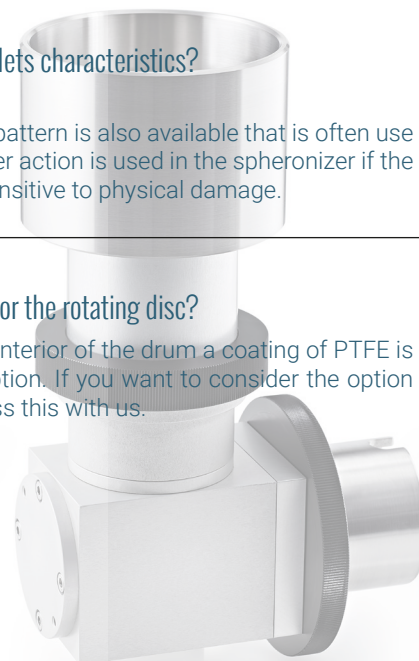
A radial disc pattern is also available that is often use when a gentler action is used in the spheronizer if the pellets are sensitive to physical damage.

### ✓ Material sticking to the disc or drum wall.....

Is there any risk that a sticky formulation might stick to the spheronizer wall or the rotating disc?

If at some point in the future there is the possibility that you may wish to work with materials that are known to be sticky then applying to the spheronizer

disc and the interior of the drum a coating of PTFE is a possible option. If you want to consider the option please discuss this with us.



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## COMPANION EQUIPMENT THAT MAY BE OF INTEREST.....



### Formulation development optimization.....

Can the Caleva Mixer Torque Rheometer (MTR-3) help me in development of formulations?

The Caleva MTR is well established as a valuable formulation development, formulation research and production quality control tool.

It provides a fast, quantitative and reproducible measurement of the wet mass in terms of the torque produced when shearing the granulation within the pivoted mixing bowl.

This ability allows formulations to be optimised and product and excipient quality issues to be identified. A valuable tool for formulation development.

Please talk to us about the Mixer Torque Rheometer and ask us about available case studies.

Please ask us for more information.



### Drying and coating pellets.....

The batch sizes of pellets produced are very small what can I use to apply functional or cosmetic coatings to these small batches?

If you are producing small quantities of pellets with the Caleva Multi Lab and these require drying or coating then the only drying and spraying equipment that can operate with such small sample sizes is the Caleva Mini Coater Drier. Small quantities of spheroids (from a few grams) can be coated and dried in minutes.

Other pellet coaters might require a minimum batch of between 300 g and 500 g to work effectively, but this robust, simple-to-operate, bench-top unit provides a cost-effective solution for drying and coating particles. The practical unit, which is fully compliant with principles of GLP, can satisfy other applications such as the experimental coating of granules with catalytic material, food material and fluid-filled gelatine capsule.

Please talk to us for more information.



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## INSTALLATION, TRAINING, & VALIDATION OPTIONS



### ✓ Validation and training options.....

#### ✓ Will caleva be able to offer a full validation package for my equipment if this is necessary?

Caleva can offer a range of training and validation options. These can be customized so that they are appropriate for your specific requirements.

A summary is given below. You should discuss your actual needs with us so that an appropriate package can be offered.

#### ✓ Factory acceptance test (FAT) at the Caleva site

A ISO 9002:2015 compliant and certified quality check is completed before equipment is shipped (a copy is supplied to the customer if requested). A separate FAT is not normally necessary but can be performed if required.

You can attend if you wish to do so. We can provide local assistance but you will be responsible for your own expenses incurred or your transportation, subsistence, and accommodation.

#### ✓ Customer training at the Caleva site

Training is optional but recommended if extrusion and spheronization is new to you or your staff would benefit. Training is generally recommended for most customers purchasing the MCD-2 and the MTR-3.

We offer training at our site before the equipment is shipped, or at your site after the equipment has arrived. If either of these options are not suitable then we can offer training and installation support by Skype (or similar)

#### ✓ Installation, training and validation at your site

A full set of options for training, installation and validation of all Caleva equipment can be offered at your site. The details will depend on your location

and your specific equipment. Contact us to discuss your preferences and we will put together a proposal for you.

#### ✓ Full validation and/or provision of IQ/OQ documentation and/or material certificates

Recommended if required for regulatory purposes:-

##### With Caleva assistance at Caleva site:

The IQ/OQ package can be completed (as far as possible) at the Caleva site by us. You may attend if you wish to do so. An additional set of blank documents is provided to allow you to re-do the IQ/OQ in your own facility after installation.

##### With Caleva assistance at customer site:

IQ/OQ and installation completed at the customer site at the same time as installation and training.

##### Provision of blank IQ/OQ documents only:

If you do not require assistance to complete the IQ/OQ then a set of blank documents can be purchased from caleva so that you can complete this at your site without a Caleva presence.

##### Provision of material certificates only:

Consistent with most companies today Caleva does not automatically offer material certificates for product contact parts. Caleva will provide free of charge a letter confirming that material certificates will be available for purchase by the original purchaser for a period of 12 months from the date of purchase. Material certificates can be purchased if required.

Installation - Training - Validation

## TALK TO US AND DISCOVER MORE ABOUT THESE OPTIONS

Please call us without obligation

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Certificate Number: 1503

Ver 20802