



KINEMATICA

Homogenizing perfected.



LABORATORY LINE

POLYTRON[®] Dispersing Aggregates

A design for every need.

A passion for homogenization.

Since over 60 years.

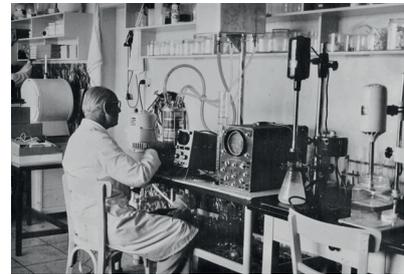
Efficient mixing with droplet and particle size reduction has been and will always be the main focus of Kinematica - it's a **true passion** to find the right mix between amount of teeth, length of teeth, angle of teeth, distance between the rotating and the static part (called Rotor/Stator), material of construction to withstand the various different fields of applications and making it all work together at highest possible speed velocities to create the perfect environment for what is sometimes oversimplified by being simply called homogenization.

With an array of different rotor/stator geometries that span application volumes from a few micro liters to several hundred thousand liters of throughput capacity we find answers for almost every challenge. If it doesn't exist we work on getting there.

Our passion is to **always** find the perfect homogenizer for every application challenge.

This brochure aims to give an overview, a glimpse, of what is available and aims to trigger a conversation between you and our application specialists that are available around the world.

Therefore we invite you to read through this brochure and then let us know what we can do for you to accomplish your mission, improve, speed it up, get your application to the next level - **whatever it takes we are there for you.**



Picture of Prof. P. Willems, the founder of Kinematica and inventor of the rotor / stator homogenizing technology. Shown at work in his chemical & physical research institute situated in Lucerne / Switzerland in the 60ies.

Our innovation. Your productivity.

Rotor / stator: The principle.

Optimized shear forces and cutting effects will allow for the processed medium to be treated at finest level in the shortest amount of time, thus making Kinematica the undisputed market leader in efficiency.

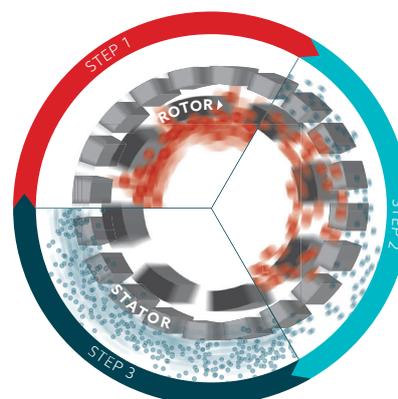
THE PRINCIPLE

The spinning rotor generates a vacuum. The sample is drawn in and discharged to the outside through the stator's slots. Between the rotor / stator (shear gap), the product is subject to high deceleration-tangential and radial acceleration forces. The individual particles / droplets are torn apart and thus reduced in size; they are reduced several micrometers in size through additional cutting and crashing effects.

THE RESULT

Microscopic dispersions, emulsions, suspensions, and foams are generated. Droplets, particles, and gas bubbles are reduced to several micrometers or smaller. Small and large substances are dispersed more economically, faster, and better than with any other system.

Your samples are efficiently «**POLYTRONIZED**».



DISPERSING

HOMOGENIZING

EMULSIFYING

SUSPENDING

WET MILLING

GASSING

SAMPLE PREPARATION

ACCELERATION OF

REACTIONS

POLYTRON® Immersion Dispersers.

Designed for. Efficient and powerful.

KINEMATICA offers a complete range of immersion dispersers or batch homogenizers for the use in lab, pilot plant and production. Starting from 0.05 ml up to 10'000 l suitable solutions combining powerful drive units and efficient dispersing aggregates can be offered to solve your application in the pharmaceutical, chemical, cosmetic, food and life science field.

BATCH PROCESSING.

Our immersion systems (POLYTRON®) are manufactured to seamlessly fit and serve batch / lot processing architectures. The Kinematica design and wide range of accessories allow for an ideal positioning of rotor / stator inside the batch vessel: as a result, the best performances can be achieved.



RESULTS AND FEATURES ARE CONVINCING

- Smallest sizes of particles / droplets because precise analysis require homogeneous samples
- Efficient sample preparation because fast dispersion saves time
- Standard or custom-made aggregates perfected for and in cooperation with the users
- Cleaning and disassembly: EasyClean Design makes it very simple
- Quick coupling of the aggregates by using Click & Go
- Best materials and durable design. Swiss Made.

SCALE-UP

You can use test results to scale-up to our pilot plant and industrial POLYTRON® machines. The volume range for our batch units is seamlessly available up to 10'000 liters.



LABORATORY



LABORATORY TO PILOT PLANT



PRODUCTION



Aggregate Technology.

Unparalleled.



The high efficiency and the uniqueness of our POLYTRON® dispersing aggregates can only be achieved through superior manufacturing precision and the sophisticated Kinematica design method. This is 100% Swiss Made.

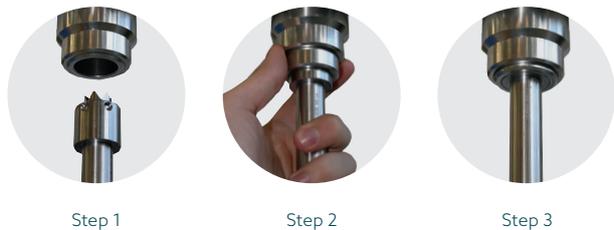
Materials

Dispersing aggregates from Kinematica are made from high-alloy stainless steel 316L, electropolished, $R_a \leq 1.6\mu\text{m}$ as standard. Depending on the application or customer specifications materials like Hastelloy, Inconel, Titan, Super-Duplex and surfaces down to $R_a \leq 0.4\mu\text{m}$ can be offered.



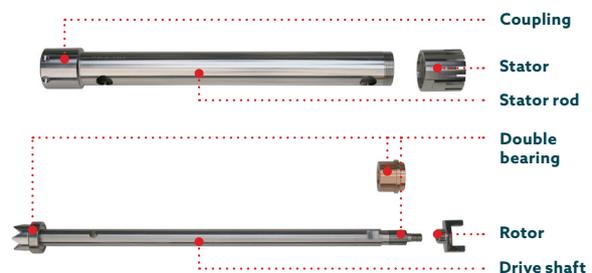
Our high-precision quick-coupling system: Click & Go

Kinematica aggregates solve all problems you are faced with every day in the laboratory. With the elegant stainless steel Click & Go coupling you can lock the POLYTRON® dispersing aggregate by a single operation without tedious tightening of screws or other handling.



Double bearing

Depending on the diameter, our aggregates are made with high-quality plastic, special carbide or bronze / carbide bearings. They have excellent mechanical properties and chemical resistance and have FDA approvals. Super high-speed ball bearings are used in the couplings to provide stability at speeds of up to 30 000 rpm.



CLEANING AND DISASSEMBLY

EasyClean: Our technology ensures the simplest removal and fast cleaning, either by hand, dishwasher or autoclave. Disassembling the precisely fitting components is simple and fast.



Standard or Custom-Made.

Kinematica - The specialist for customized solutions.

Our team of experts include process, mechanical and design engineers, along with application specialists, combining long term experience, will sit down with you and be with you every step of the way to be sure that the final product is exactly what is needed for your application.

STANDARD AGGREGATES

Standard dispersing aggregates come with the KINEMATICA EC (EasyClean) Design and rotor / stator geometries with two, four or six teeth rows. This is all you need for popular applications in the preparation of samples, formulation development and small scale production. Up to Ø 20 mm the stator has embedded cutting teeth to optimize the pre-crushing of the sample. An enclosed ring design provides optimum protection for those teeth and prevents them from bending.

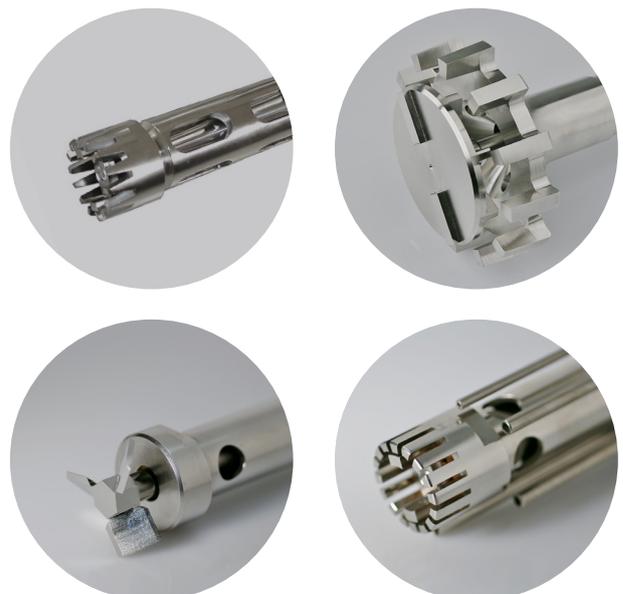


SPECIAL AGGREGATES

Specializations in the chemical, pharmaceutical, cosmetic, and food industry, as well as life science, makes new designs inevitable.

Whether you have to deal with stringy, fibrous, brittle or tough samples / products, or to work under pressure / vacuum, non-viscous to high-viscous we will have a solution for you.

These aggregates are based on state-of-the-art technology and only available from Kinematica. These highly specialized tools are subject to further development that involves close cooperation with our customers and universities. Thus, it is continuously perfected for specific applications.



A unique value proposition.

Kinematica dispersing aggregates: a design for every need.

POLYTRON® dispersing aggregates are available in different designs, like rotor with knives for pre-cutting, rotor/stator with several teeth rows for finest results, with mechanical seals for vacuum and pressure applications and more.



«../2-DESIGN»

The universal geometry uses two rows of teeth, is suitable for a large spectrum of laboratory applications, and it is reliable and efficient.

Selection of applications

- All standard dispersing, emulsifying and suspending tasks
- Dispersing of plant, human or animal tissues, resins and pigments in a variety of fluids and volumes
- Sample preparation for the extraction and dissolution of organic materials
- Intensive mixing, dissolving solids



«../4-DESIGN»

Geometry with two rows of teeth for more shear.

Selection of applications

- Fine emulsions and suspensions
- Mixes and reduces highly intensive solids into fluids
- Gaseous solutions
- Separates fibres and cellular material into very small particles
- Extractions



«../6-DESIGN»

Geometry with three rows of teeth for max shear.

Selection of applications

- Making finest emulsions and suspensions
- Mixes and reduces highly intensive solids into fluids
- Gaseous solutions
- Separates fibres and cellular material into very small particles
- Extractions



SYN «SYNTHETICS» - DISPOSABLE

Disposable aggregates when processing multiple samples per day, where the required sterilization of stainless steel aggregates represents a significant time limitation. Available also sterile packed.

Selection of applications

- Prevention of X-contamination
- Standard dispersing applications similar to «../2» geometry



M «M-DESIGN» - ROTOR WITH KNIVES FOR PRE-CUTTING

Outside blades pre-crush samples that are larger than the rotors diameter. Subsequently, they can be dispersed inside the generator.

Selection of applications

- Dispersing of samples with larger diameters made simple
- Standard dispersing, emulsifying and suspending tasks



W «W-DESIGN» - FOR FIBROUS / STRINGY MATERIALS

Special design to prevent clogging of the teeth.

Selection of applications

- Dispersing fibrous, stringy or solid samples (e.g., pieces of meat)
- Standard dispersing, emulsifying and suspending tasks



X «X-DESIGN» - FOR HARD & BRITTLE PILLS AND GEL CAPS

A special geometry designed for dispersing tablets and pills or for preventing suppositories from clogging.

Selection of applications

- Ultrafast crushing of tablets, coated pills, and suppositories.
- Basis for the analysis of active pharmaceutical ingredients (APIs)
- Used in the substance analysis or for the quality control during the production of tablets

A unique value proposition continued.

Kinematica dispersing aggregates: a design for every need.



Z «Z-DESIGN» - FOR PILLS AND HARD / BRITTLE SAMPLES

Breaking up of hard samples.

Selection of applications

- Hard and brittle material
- Breaking open and dispersing of pills, capsules and hard large grains, corns

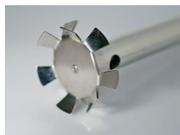


B «BIOTRONA® -DESIGN» - HIGH-TURBULENCE MIXING

High-turbulence mixing head with low shear forces and energy inputs. Time saving with improved results compared to stirrers and dissolvers of up to 90%.

Selection of applications

- Fast dissolving and suspending of solid particles into liquid also at higher viscosities



D «DISSOLVER-DESIGN»

High-speed dissolver.

Selection of applications

- Fast mixing, dissolving
- Processing of highly viscous products



TIN «TITANIUM NITRATED» - UPGRADE

Rotor and /or stator with up to three rows of teeth with a titanium nitrated (TiN) coating.

Selection of applications

- All dispersing applications with abrasive samples



«INJECTOR» - LIQUID INJECTION DIRECTLY INTO THE GENERATOR

The Rotor/Stator can be provided with specially designed injectors for introducing solids or liquids directly into the homogenization zone.

Selection of applications

- controlled mixing
- gas, oil or other phase inputs
- prevents uncontrolled reactions
- additional product stream



G «GAS TIGHT - WITH SINGLE MECHANICAL SEAL» FOR PRESSURE / VACUUM

Integrated mechanical seals.

Selection of applications

- Under pressure or vacuum
- Preventing air from being added to emulsions
- Corrosive acid mixtures

Compatibility tables.

Brief overview of the aggregate portfolio.

The selection of the right dispersing aggregate and the right drive system depends on the application: treated product, viscosity, processing time, volume, etc. Kinematica does not leave you alone with these difficult questions. Our applications team would like to discuss with you the right system components for succesful working in accordance to a filled-in questionnaire or a test run in our laboratory.

AVAILABLE DISPERSING GENERATOR DIAMETER

Systems	Ø 3mm	Ø 5mm	Ø 7mm	Ø 12mm	Ø 20mm	Ø 25mm	Ø 30mm	Ø 36mm	Ø 40mm	Ø 45mm	Ø 50mm	Ø 60mm
PT 1200 E	✓✓✓	✓✓✓	✓✓✓	✓✓								
PT 1300 D	✓✓✓	✓✓✓	✓✓✓	✓✓								
PT 2500 E	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓						
PT 10-35 GT		✓	✓✓	✓✓✓	✓✓✓		✓✓✓	✓✓				
PT 45-80 GT		✓	✓	✓	✓✓		✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓
PT 3100 D		✓	✓✓	✓✓✓	✓✓✓		✓✓✓	✓✓				
PT 6100 D		✓	✓	✓	✓✓		✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓

✓ marginal ✓✓ ok ✓✓✓ ideal

AVAILABLE DISPERSING GENERATOR GEOMETRIES

Design «R/S-Head»	Ø 3mm	Ø 5mm	Ø 7mm	Ø 12mm	Ø 20mm	Ø 25mm	Ø 30mm	Ø 36mm	Ø 40mm	Ø 45mm	Ø 50mm	Ø 60mm
..2 (R/S with 1TR each)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
..4 (R/S with 2TR each)							✓	✓	✓	✓	✓	✓
..6 (R/S with 3TR each)										✓	✓	✓
Synthetics-Design			✓	✓								
M-Design				✓	✓		✓	✓	✓	✓	✓	✓
W-Design				✓	✓	✓	✓	✓	✓	✓	✓	✓
X-Design					✓							
Z-Design				✓			✓					
BIOTRONA®-Design			✓	✓	✓			✓		✓		
Dissolver-Design							✓				✓ (53)	✓ (65)

✓ available TR = teeth row(s) R/S = rotor / stator (=dispersing generator)



Glossary.

Key to Dispersing Aggregates codes.

The product coding of our Dispersing Aggregates includes basic technical design features which can be found in the table below.



PT-DA 30 / 2WEC-F 250



- | | |
|---------------------------------|---|
| 1. PT-DA 30/2WEC-F 250 | POLYTRON® Dispersing Aggregate |
| 2. PT-DA 30 /2WEC-F 250 | Diameter of the stator in mm
Up to a diameter of 20 mm the stator tube and the stator of the dispersing generator are made of one piece and the stator is equipped with saw teeth and safety ring as standard |
| 3. PT-DA 30/ 2 WEC-F 250 | Number of teeth rows of rotor and stator
../2 = rotor and stator with one teeth row each
../4 = rotor and stator with two teeth rows each
../6 = rotor and stator with three teeth rows each |
| 4. PT-DA 30/ 2W EC-F 250 | Special design regarding rotor or stator
M = rotor with knives for precutting
W = W generator for fibrous and stringy materials
X = X generator for tablets and pills
B = BIOTRONA® generator: high turbulence, low shear force |
| 5. PT-DA 30/2W EC -F 250 | Design of shaft/stator tube
EC = EasyClean design, easy disassembly, sterilizable
G = Stator tube with mechanical seal for vacuum/pressure applications |
| 6. PT-DA 30/2WEC- F 250 | Type of coupling/suitable drive system
E = PT 1200 E, PT 1300 D, PT 2500 E
F = PT 10-35 GT, PT 45-80 GT, PT 3100 D, PT 6100 D |
| 7. PT-DA 30/2WEC-F 250 | Length of shaft/stator tube in mm |

Ordering information.

The right dispersing aggregate for your POLYTRON® system.

The Kinematica portfolio includes over 80 different and exchangeable POLYTRON® dispersing aggregates: the best generator for each specific homogenizing application can be selected.

For drive units with E-coupling



PT 1200 E



PT 1300 D



PT 2500 E

Sales No.	Product	ø / length mm	Volume ml	max. Tip speed m/s
«../2-DESIGN»				
11030004	PT-DA 03 / 2EC-E050	3 / 50	0.05 – 2	3
11030012	PT-DA 05 / 2EC-E085	5 / 85	0.1 – 5	5
11030031	PT-DA 07 / 2EC-E107	7 / 107	0.3 – 10	8
11030062	PT-DA 12 / 2EC-E123	12 / 123	3 – 250	14
11030042	PT-DA 12 / 2EC-E157	12 / 157	3 – 250	14
11030069	PT-DA 20 / 2EC-E192	20 / 192	20 – 2000	22
11030264	PT-DA 25 / 2EC-E192	25 / 192	100 – 2500	26
11030265	PT-DA 25 / 2FEC-E192	25 / 192	100 – 2500	26
SYN «SYNTHETICS» - DISPOSABLE				
11030030	25 x PT-DA 07 / 2SYN-E082*	7 / 82	0.3 – 10	7
11030037	25 x PT-DA 07 / 2SYN-E082**	7 / 82	0.3 – 10	7
11030038	12 x PT-DA 07 / 2SYN-E082**	7 / 82	0.3 – 10	7
11030035	10 x PT-DA 12 / 2SYN-E126*	12 / 126	2 – 250	12
11030036	10 x PT-DA 12 / 2SYN-E126**	12 / 126	2 – 250	12
*Sterile pack / **Non-sterile pack				
M «M-DESIGN» - ROTOR WITH KNIVES FOR PRE-CUTTING				
11030266	PT-DA 12 / 2MEC-E157	12 / 157	3 – 250	14
11030263	PT-DA 20 / 2MEC-E192	20 / 192	20 – 2000	22
11030293	PT-DA 25 / 2MEC-E192*	25 / 192	20 – 2500	26
*M-design aggregate in gas-tight model				
W «W-DESIGN» - FOR FIBROUS / STRINGY MATERIALS				
11030060	PT-DA 12 / 2WEC-E157	12 / 154	3 – 250	14
11030258	PT-DA 20 / 2WEC-E192	20 / 192	20 – 2000	22
11030276	PT-DA 20 / 2WMEC-E192**	20 / 192	20 – 2000	22
11030290	PT-DA 20 / 2WEG-E210*	20 / 210	20 – 2000	22
11030294	PT-DA 25 / 2WEC-E192*	25 / 192	20 – 2500	26
* W-design aggregate in gas-tight model / ** W-design aggregate with knives				

Ordering information continued.

For drive units with E-coupling

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Sales No.	Product	ø / length mm	Volume ml	max. Tip speed m/s
X «X-DESIGN» - FOR HARD & BRITTLE PILLS AND GEL CAPS				
11030255	PT-DA 20 / 2XEC-E116	20 / 116	min. 10*	21
11030277	PT-DA 20 / 2XEC-E157	20 / 157	min. 10*	21
*When using a vessel ø 22 mm / volume is always dependent on the diameter of the vessel				
Z «Z-DESIGN» - FOR PILLS AND HARD / BRITTLE SAMPLES				
11030067	PT-DA 12 / ZMEC-E157*	12 / 157	2 - 250	12
* Z-Design aggregate with knives				
B «BIOTRONA® -DESIGN» - HIGH-TURBULENCE MIXING				
11030034	PT-DA 07 / BEC-E107	07 / 107	10 - 100	7
11030286	PT-DA 12 / BEC-E157	12 / 157	50 - 500	12
11030288	PT-DA 20 / BEC-E192	20 / 192	20 - 2000	21
11030291	PT-DA 25 / BEC-E192	25 / 192	250 - 4000	26
TiN «TITANIUM NITRATED» - UPGRADE				
11035050	TiN rotor for the selected dispersing aggregate			ø 12 - 60 mm
11035150	TiN stator for the selected dispersing aggregate			ø 12 - 60 mm
G «GAS TIGHT - WITH SINGLE MECHANICAL SEAL» FOR PRESSURE / VACUUM				
11030273	PT-DA 20 / 2G-E210	20 / 210	20 - 2000	22

Ordering information.

The right dispersing aggregate for your POLYTRON® system.

For drive units with F-coupling



PT 10-35 GT



PT 45-80 GT



PT 3100 D
PT 6100 D



Sales No.	Product	ø / length mm	Volume ml	max. Tip speed m/s
«../2-DESIGN», «../4-DESIGN», «../6-DESIGN»				
11030297	PT-DA 05 / 2EC-F078	5 / 78	0.1 - 5	5
11030298	PT-DA 07 / 2EC-F101	7 / 101	0.3 - 10	8
11030299	PT-DA 12 / 2EC-F154	12 / 154	3 - 250	14
11030302	PT-DA 20 / 2EC-F193	20 / 193	20 - 2000	22
11030305	PT-DA 30 / 2EC-F250	30 / 250	100 - 4000	30
11030311	PT-DA 30 / 4EC-F250	30 / 250	100 - 4000	30
11030313	PT-DA 36 / 2EC-F250	36 / 250	200 - 4500	34
11030317	PT-DA 36 / 4EC-F250	36 / 250	200 - 4500	34
11030320	PT-DA 40 / 2EC-F250	40 / 250	200 - 5000	36
11030325	PT-DA 45 / 2EC-F250	45 / 250	200 - 6000	40
11030329	PT-DA 45 / 6EC-F250	45 / 250	200 - 6000	40
11030330	PT-DA 50 / 2EC-F250	50 / 250	300 - 10 000	44
11030335	PT-DA 50 / 4EC-F250	50 / 250	300 - 10 000	44
11030338	PT-DA 60 / 2EC-F250	60 / 250	300 - 30 000	50
M «M-DESIGN» - ROTOR WITH KNIVES FOR PRE-CUTTING				
11030300	PT-DA 12 / 2MEC-F154	12 / 154	3 - 250	14
11030303	PT-DA 20 / 2MEC-F193	20 / 193	20 - 2000	22
11030307	PT-DA 30 / 2MEC-F250	30 / 250	100 - 4000	30
11030308	PT-DA 30 / 2MG-F273*	30 / 273	100 - 4000	30
11030315	PT-DA 36 / 2MEC-F250	36 / 250	200 - 4500	34
11030322	PT-DA 40 / 2MEC-F250	40 / 250	200 - 5000	36
11030323	PT-DA 40 / 2MG-F250*	40 / 250	200 - 5000	36
11030332	PT-DA 50 / 2MEC-F250	50 / 250	300 - 10 000	44
11030333	PT-DA 50 / 2MG-F250*	50 / 250	300 - 10 000	44
11030340	PT-DA 60 / 2MEC-F250	60 / 250	300 - 30 000	50
11030341	PT-DA 60 / 2MG-F250*	60 / 250	300 - 30 000	50

*M-design aggregate in gas-tight model

Ordering information continued.

For drive units with F-coupling

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Sales No.	Product	ø / length mm	Volume ml	max. Tip speed m/s
W «W-DESIGN» - FOR FIBROUS / STRINGY MATERIALS				
11030301	PT-DA 12/2WEC-F154	12/154	3 – 250	14
11030304	PT-DA 20/2WEC-F193	20/193	20 – 2000	22
11030294	PT-DA 20/2WEG-F210*	20/210	20 – 2000	30
11030309	PT-DA 30/2WEC-F250	30/250	100 – 4000	30
11030345	PT-DA 30/2WMEC-F250**	30/250	100 – 4000	30
11030319	PT-DA 36/2WEC-F250	36/250	200 – 4500	34
11030346	PT-DA 36/2WMEC-F250**	36/250	100 – 4500	34
11030324	PT-DA 40/2WEC-F250	40/250	200 – 5000	36
11030328	PT-DA 45/2WEC-F250	45/250	200 – 6000	40
11030334	PT-DA 50/2WEC-F250	50/250	300 – 10000	44
11030342	PT-DA 60/2WEC-F250	60/250	300 – 30000	50



Z «Z-DESIGN» - FOR PILLS AND HARD / BRITTLE SAMPLES				
11030310	PT-DA 30/2ZEC-F250	30/250	100 – 4000	14
11030067	PT-DA 12/2ZMEC-E157*	12/157	2 – 250	12

*Z-Design aggregate with knives



B «BIOTRONA® -DESIGN» - HIGH-TURBULENCE MIXING				
11030355	PT-DA 07/BEC-F101	07/101	10 – 100	7
11030354	PT-DA 12/BEC-F154	12/154	50 – 500	12
11030296	PT-DA 20/BEC-F193	20/193	20 – 2000	21
11030314	PT-DA 36/BEC-F250	36/250	500 – 10000	34
11030326	PT-DA 45/BEC-F250	45/250	300 – 30000	40



D «DISSOLVER-DESIGN»				
11030344	PT-DA 30/DEC-F250	30/250	500 – 10000	30
11030337	PT-DA 53/DEC-F250	53/250	800 – 30000	47
11030343	PT-DA 65/DEC-F250	65/250	1000 – 40000	50



TiN «TITANIUM NITRATED» - UPGRADE				
11035050	TiN rotor for the selected dispersing aggregate			ø 12 – 36 mm
11035150	TiN stator for the selected dispersing aggregate			ø 12 – 36 mm



G «GAS TIGHT - WITH SINGLE MECHANICAL SEAL» FOR PRESSURE / VACUUM				
11030295	PT-DA 20/2G-F210	20/210	20 – 2000	22
11030306	PT-DA 30/2G-F273	30/273	100 – 4000	30
11030312	PT-DA 30/4G-F273	30/273	100 – 4000	30
11030316	PT-DA 36/2G-F273	36/273	200 – 4500	34
11030318	PT-DA 36/4G-F273	36/273	200 – 4500	34
11030321	PT-DA 40/2G-F273	40/273	200 – 5000	36
11030327	PT-DA 45/2G-F273	45/273	200 – 6000	40
11030331	PT-DA 50/2G-F273	50/273	300 – 10000	44
11030336	PT-DA 50/6G-F273	50/273	300 – 10000	44
11030339	PT-DA 60/2G-F273	60/273	300 – 30000	50

Dispersing vessels.

For best results.

Choosing the right dispersing aggregate is crucial for good results.

An optimized vessel also contributes to achieve the desired result even more efficiently.

THE PROBLEM

For normal cylindrical dispersing jars, the flow creates a vortex. This causes the mixing and dispersing efficiency to decrease considerably because the product can no longer be ideally recorded or processed by the dispersing generator head. This results in an extension of the process times and thus, an increased application of energy. Depending on the formation of the vortex, an increased air intake must be expected.

THE SELECTION

Our GS vessels are available in chemical and temperature-resistant borosilicate glass or stainless steel. Dimensions ranges from a few milliliters to several liters, with or without a cover, with or without a sealed lead-through.

THE SOLUTIONS

Our specially designed GS jars have a cloverleaf-like shape. This efficiently interrupts the flow in a radial direction and generates additional opposing flows. This high turbulence optimises the mixing and the dispersing efficiency. This minimises the processing time and reduces the processing of energy.

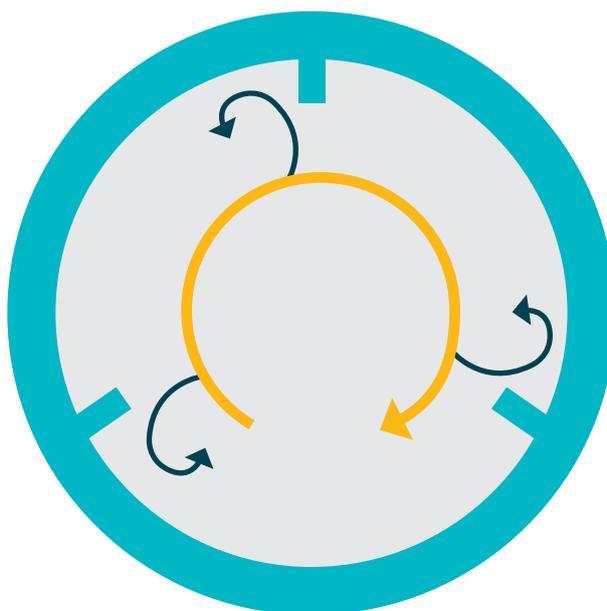
Our GS-stainless steel containers are equipped with a removable baffles part. The crossbars radically disturb the flow and generate additional opposing flows. As for the GS jars, strong turbulences are generated which optimizes the mixing in the dispersing vessel. The baffle parts can be easily removed after the dispersing process and be cleaned free of residues. Your sample or the product can be protected with the appropriate stainless steel cover.

THE MATERIALS

Borosilicate glass is a chemical and temperature-resistant glass and shows an inert behaviour towards most of the chemicals. The sterilizable screw caps with PTFE or a silicone seal are temperature-resistant up to 180°C. The stainless steel 18/10, which the vessels are made of, is rustproof, durable, has good insulating properties, completely hygienic, not toxic and not magnetic.



GS vessel principle (viewed from top)



Effect of the baffles part (viewed from above)

CLOVERLEAF-LIKE SHAPED BOROSILICATE VESSEL

Sales No.	Product	Ø/H (mm)	Process volume	Thickness	Thread	Lead-through description
Open on top						
11051010	GS 15	30/100	35ml	2.8mm	-	-
11051011	GS 25	54/150	150ml	3.5mm	-	-
11051012	GS 40	80/200	500ml	3.5mm	-	-
11051013	GS 50	90/250	1000ml	3.5mm	-	-
11051014	GS 60	100/300	1300ml	3.5mm	-	-
With screw cap and sealing						
11051020	GS 15K	30/100	35ml	2.8mm	GL25	-
11051021	GS 25K	54/150	150ml	3.5mm	GL45	-
11051022	GS 40K	80/200	500ml	3.5mm	GL45	-
11051023	GS 50K	90/250	1000ml	3.5mm	GLS80	-
11051024	GS 60K	100/300	1300ml	3.5mm	GLS80	-
Incl. cover with sealing and hole						
11051030	GS 15KL08	30/100	35ml	2.8mm	GL25	8mm hole
11051031	GS 15KL12	30/100	35ml	2.8mm	GL25	12mm hole
11051040	GS 25KL12	54/150	150ml	3.5mm	GL45	12mm hole
11051041	GS 25KL20	54/150	150ml	3.5mm	GL45	20mm hole
11051050	GS 40KL20	80/200	500ml	3.5mm	GL45	20mm hole
11051051	GS 40KL26	80/200	500ml	3.5mm	GL45	26mm hole
11051060	GS 50KL20	90/250	1000ml	3.5mm	GLS80	20mm hole
11051061	GS 50KL26	90/250	1000ml	3.5mm	GLS80	26mm hole
11051070	GS 60KL20	100/300	1300ml	3.5mm	GLS80	20mm hole
11051071	GS 60KL26	100/300	1300ml	3.5mm	GLS80	26mm hole



CYLINDRICAL-SHAPED STAINLESS STEEL VESSEL

Sales No.	Product	Ø/H (mm)	Process volume	Thickness	Thread	Lead-through description
With hook grips						
11052001	GS100-1	105/150	1000ml	1.0mm	-	-
11052002	GS100-2	135/170	2000ml	1.2mm	-	-
11052003	GS100-3	165/180	3000ml	1.2mm	-	-
11052004	GS100-4	185/185	4000ml	1.2mm	-	-
11052005	GS100-5	185/225	5000ml	1.2mm	-	-
11052006	GS100-6	185/265	6000ml	2.0mm	-	-
11052008	GS100-8	210/270	8000ml	2.0mm	-	-
11052010	GS100-10	230/280	10000ml	2.0mm	-	-
With hook grips and a cover with a drop handle						
11052101	GS100-1.C	105/150	1000ml	1.0mm	-	-
11052102	GS100-2.C	135/170	2000ml	1.2mm	-	-
11052103	GS100-3.C	165/180	3000ml	1.2mm	-	-
11052104	GS100-4.C	185/185	4000ml	1.2mm	-	-
11052105	GS100-5.C	185/225	5000ml	1.2mm	-	-
11052106	GS100-6.C	185/265	6000ml	2.0mm	-	-
11052108	GS100-8.C	210/270	8000ml	2.0mm	-	-
11052110	GS100-10.C	230/280	10000ml	2.0mm	-	-
With hook grips, equipped with a baffles part inset and a cover with a drop handle						
11052201	GS100-1.C.B.	105/150	1000ml	1.0mm	-	-
11052202	GS100-2.C.B.	135/170	2000ml	1.2mm	-	-
11052203	GS100-3.C.B.	165/180	3000ml	1.2mm	-	-
11052204	GS100-4.C.B.	185/185	4000ml	1.2mm	-	-
11052205	GS100-5.C.B.	185/225	5000ml	1.2mm	-	-
11052206	GS100-6.C.B.	185/265	6000ml	2.0mm	-	-
11052208	GS100-8.C.B.	210/270	8000ml	2.0mm	-	-
11052210	GS100-10.C.B.	230/280	10000ml	2.0mm	-	-





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