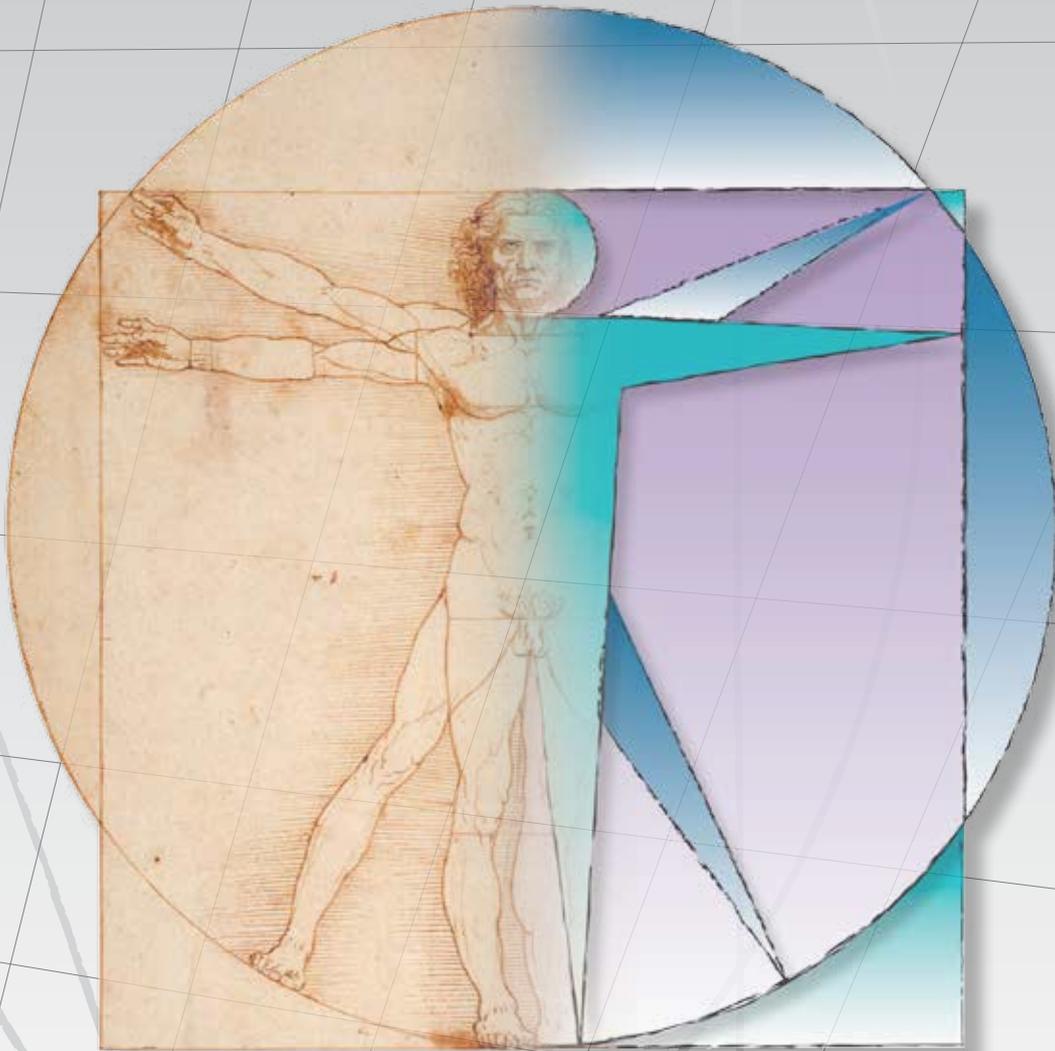


# ARGAL

CHEMICAL PUMPS

*production program*



**CENTRIFUGAL PUMPS**  
**IN THERMOPLASTIC AND THERMOSETTING MATERIALS**  
**AIR OPERATED DOUBLE DIAPHRAGM PUMPS**

## The company

### Quality, Experience, Innovation.

Established as supplier of the galvanic industry from which it borrows its name, the company Argal has been designing and manufacturing pumps for chemicals made of thermoplastic polymers for over 30 years.

The products turned out to be an ideal solution for the broad resistance of the thermoplastic materials to aggressive chemical agents that offer at affordable price a true alternative to expensive special alloys.

In 2011 began the production of air driven double diaphragm pumps of the Astra range.

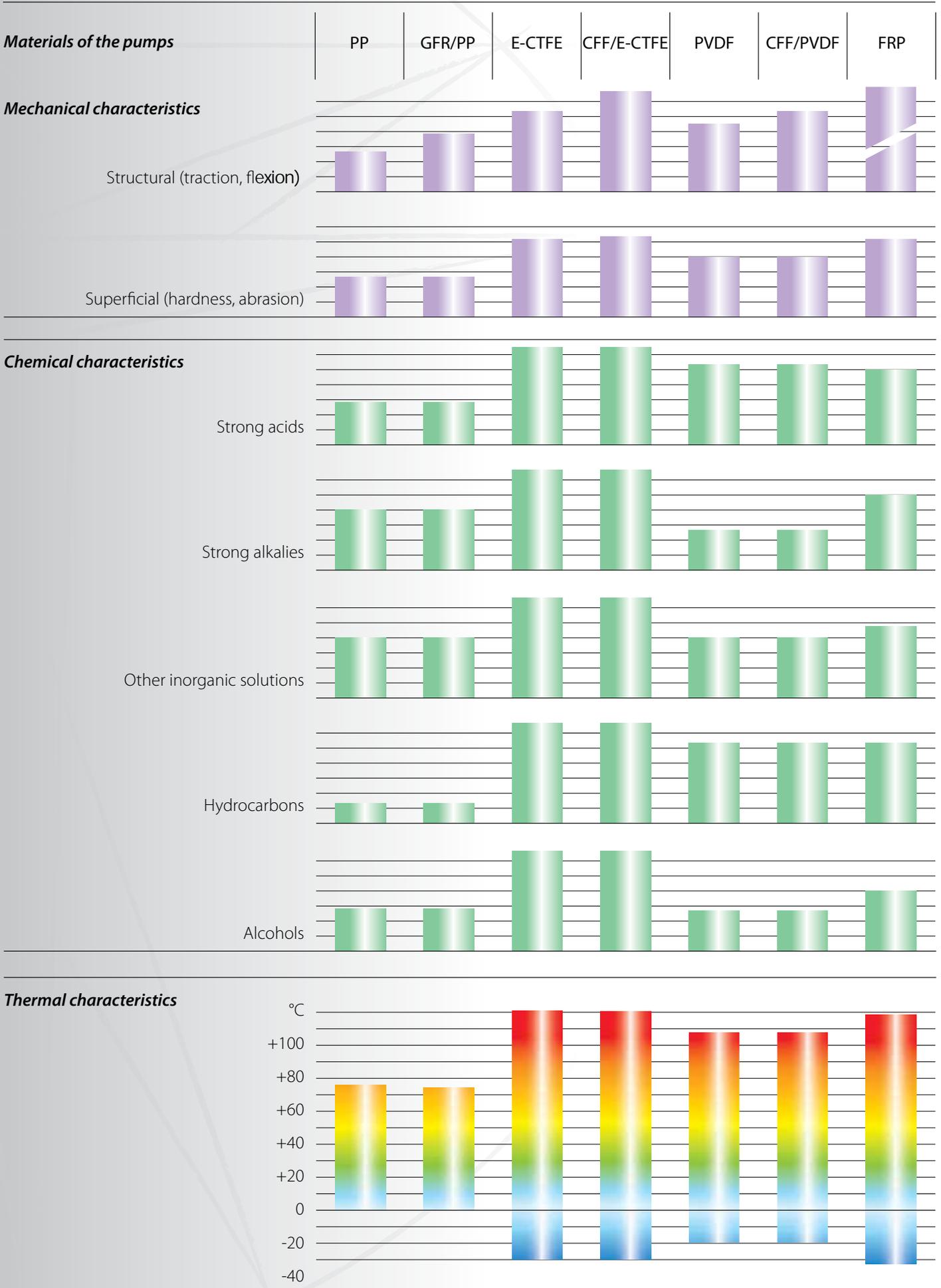
Since 2012 we have added SATURN: range of centrifugal pumps in thermosetting resins (fiberglass).

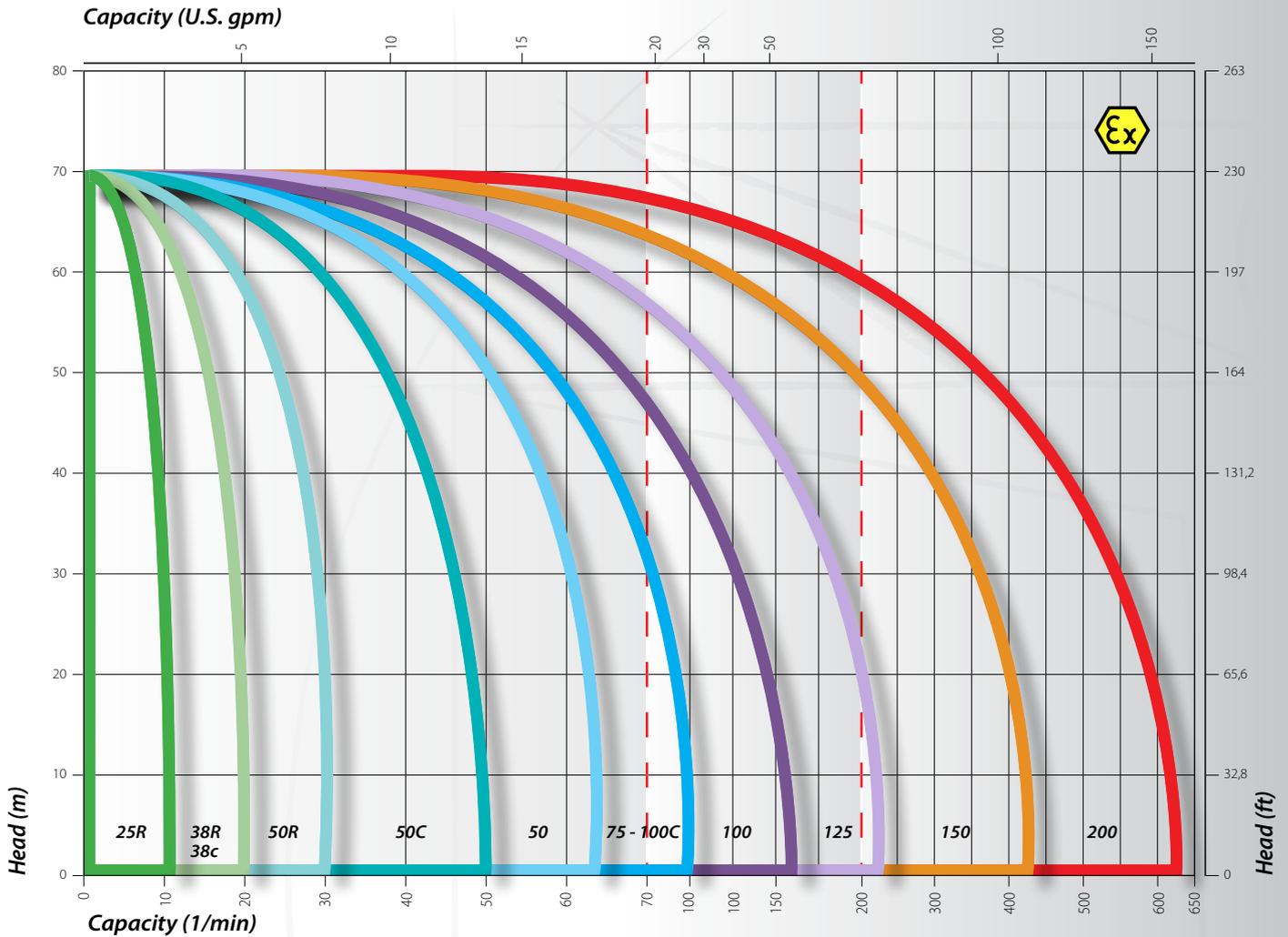
Therefore the Company delivers a large choice of pumps in different construction to address industrial applications where temperature ranges from  $-40^{\circ}\text{C}$  to  $120^{\circ}\text{C}$ , flow up to  $1600\text{ m}^3/\text{h}$  and head up to 150 meter.

The ISO 9001:2000 compliance obtained in 2002 certifies sound organisational procedures, the adequacy of the operative instruments available as the parametric CAD and the FEM analysis adopted by our engineering department, the numerical control machinery, the fully equipped assembly department featuring modern test room, the constant support provided to a permanent staff of professionals constantly informed and trained.



**Comparison diagrams of employed materials**





**Range ASTRA**

Astra pump are double chamber volumetric pumps. The diaphragms linked by a common shaft move of alternative motion within coaxial chambers and are displaced by pressurised air alternatively delivered to their rear side by an air distributor such that while one diaphragm draws the fluid into one chamber from a common manifold the other diaphragm pumps the fluid from the opposite chamber in to the other common manifold.

Currently the range proposed includes the sizes 1/4" - 3/8" - 1/2" - 3/4" - 1" - 1 1/4" - 1 1/2" - 2".

**ATEX:** All metallic and plastic standard executions are adequate to operate in environments at risk of explosion classified as "Zone 2" (Series II 3/3GD IIB T 135°C) of European ATEX regulation.

For operations in ATEX areas classified as "Zone 1" (II 2/2GD IIB T 135°C) Argal offers pumps manufactures with conductive parts for all thermoplastic and metallic versions.



**DDA 25R - 38R - 50R**

The "R" models are the result of a design oriented to combine ease of use, compact dimensions and affordable price. In these pumps the liquid passes straight through the central case and the external manifolds are abolished in favour of reduced dimensions and reduced liquid friction and hydraulic loss.

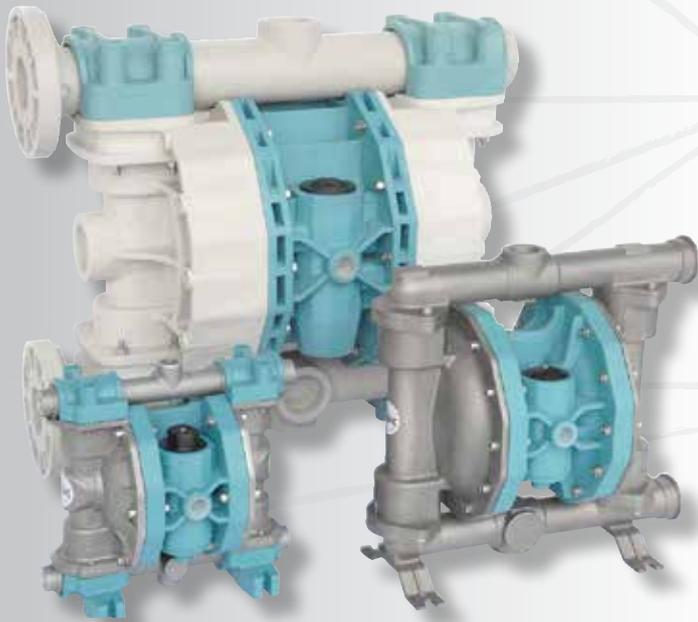
Connections: 1/4" - 3/8" - 1/2"  
 Pump casings: GFR/PP - CFF/PVDF - PVDF - POMc

**DDA 38C - 50C**

This pump size is in large market demand and Argal wants to offer a perfectly balanced solution with a modern pump complete and characterised by high quality and top performances.

Connections: 3/8" - 1/2"  
 Pump casings: GFR/PP - CFF/PVDF - PVDF (Aluminum and SUS 316 only for 50C model)





**DDA 50 - 75 - 100C - 100 - 125 - 150 - 200**

ARGAL AODD pumps are available in two version **N**ormal and **P**rogress. Both version are designed an pre set for following options:

“Two in one” delivery manifold; Detection of cycles with normalised probe, extra low pressure operation with actuation circuit of diaphragms independent from pilot command circuit, pneumatic signals in response of the end of run positions of the diaphragms, adaptors to feed air chambers from external source, submersible configuration.

Progress version All the pump models can be fitted with an integrated control dial distribution valve easily adjustable to set the device on preset positions optimised to pump problematic fluids as liquids laden with solids or very viscous.

This in built regulator device is valuable for, either at the installation or at later times allows, by selecting the best set up, to fine tune the pump to the specific application thus reducing significantly the air consumption of the pump and its overall efficiency and flexibility.

Connections: 1/2" - 3/4" - 1" - 1 1/4" - 1 1/2" - 2"

Pump casings: GFR/PP - CFF/PVDF - PVDF - Aluminum - SUS 316



**FDA**  
compliant

**DFA 75 - 125 - 150 - 200**

ASTRAFOOD “DFA” serie thanks to their characteristics and design can be applied for the transfer of fluids deployed in industries as food, the cosmetics, pharmaceuticals, or chemical additives, beverages, dairy, biotechnologies, medical appliances, paint and in all those applications where a quick release clamp connection is required or appreciated.

ASTRAFOOD are constructed with materials compliant to FDA regulation, wet parts of electro polished SUS 316 with surface finish to 125 Ra and PTFE, both certified for food applications. All ASTRAFOOD pumps comply to ATEX Zona 2 regulation and are adequate to operate in areas with atmosphere potentially explosive and with the variant of the conductive executions can operate also in areas classified as ATEX Zone 1.

These pumps are capable to pump fluids with very high viscosity and temperature up to 95 °C.

Clamp connections: 1" - 1 1/2" - 2" - 2 1/2"

Pump casings: SUS 316 (polished)

**Dampeners PDA 75 - 100 - 150 - 200**

The range of SELENE flow pulsation dampeners exploits a new technology which minimises the pulsation typical of the flow delivered by air operated double diaphragm pumps.

SELENE dampeners are “active” and do no need tuning or pre loading for they are self adaptive; their can dampen the amplitude of the pulsations up to 90% of their max. amplitude.

Dampener require a minimal maintenance and are available in the same construction materials of the liquid chambers and diaphragms for thermoplastic pumps and in stainless steel SUS 316 for the metallic versions.

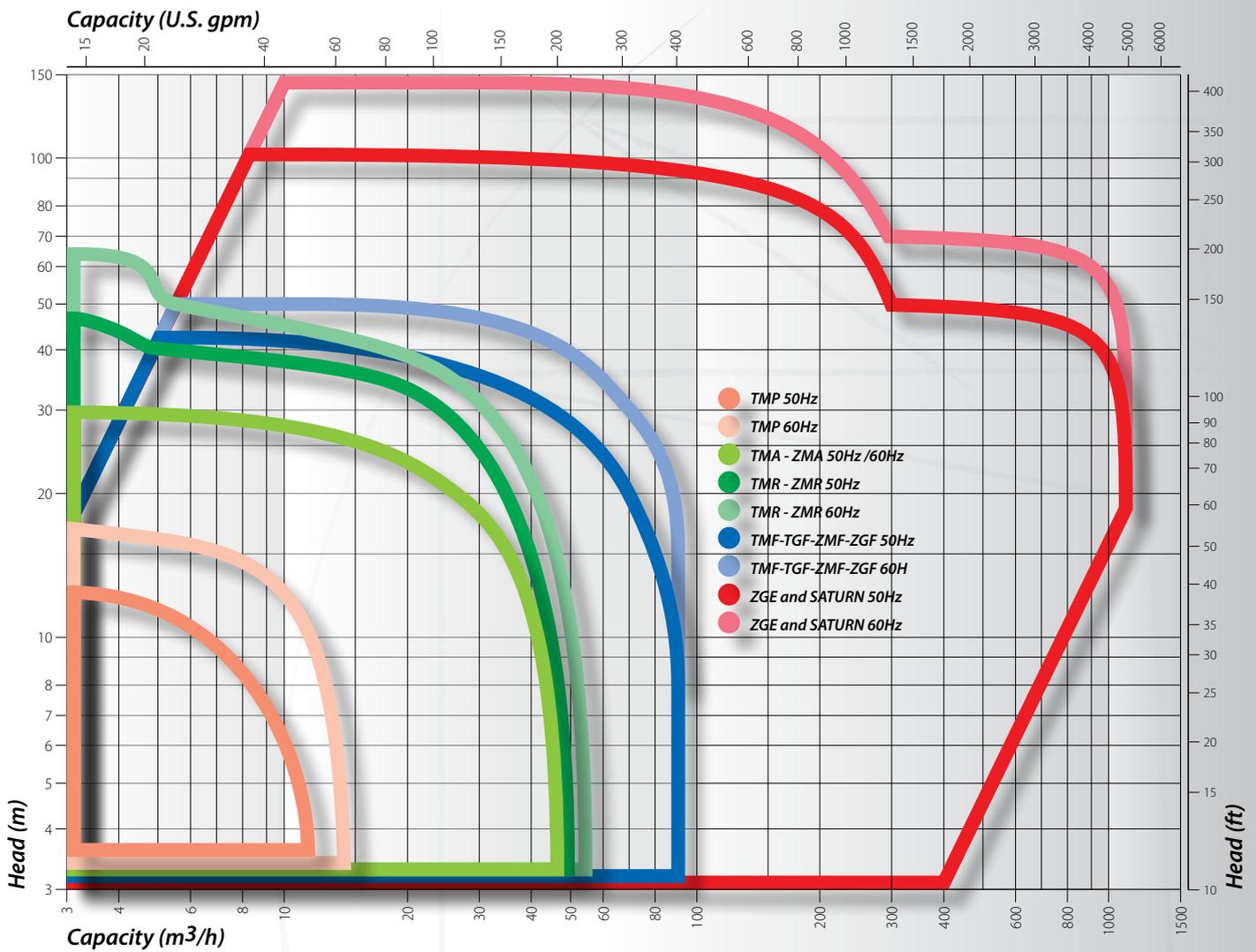
For aluminum made pumps the SELENE dampeners are constructed in PPS.

SELENE dampeners are available in ATEX compliant version and are adequate to operate in areas at risk of explosion areas classified as ATEX Zone 1.

Connections: 3/4" - 1" - 1 1/2" - 2"

Body materials: GFR/PP - CFF/PVDF - PVDF - PPS - SUS 316





**Range ROUTE**

It is a range of chemical pumps for different applications available either in magnetical driven version (TMR serie) or mechanically sealed (ZMR serie).

All pumps are available with "ATEX" construction.



**TMR**

The magnetic driven pumps have the patented "two axial directions self-alignment" system that allows the dry running for "R" internal configuration.

The combination of adequate materials of guide system of the impeller to one specific magnetic field eliminates completely all the axial frictions that are the cause of breakages due to dry running. It is possible to install the motor without disassembling the pump.



**ZMR**

Centrifugal horizontal close coupled pumps in thermoplastic materials, strongly built by injection moulding process.

The structure is reinforced by fillings of glass or carbon fibre. Mechanical seal executions can be either single or double.

Available motor powers: kW 0,55 ÷ 15

Material versions: GFR/PP - CFF/E-CTFE

**TMB**

The pumps "TMB" belong to Argal's BASIS range and feature, single stage, centrifugal impeller and magnetic drive. The range of TMB pumps includes five models to deliver flows from 15 to 70 l/min. It is made entirely of thermoplastics with outstanding chemical and mechanical resistance namely glassfibre reinforced polypropylene (GFR/PP).

Compact dimension, low noise, absence of seal device make these pumps ideal for application in any place or plant and can be incorporated into sophisticated equipment or "clean" environment.

Available motor powers: W 15÷100

Material version: GFR/PP



**TMP**

The pumps of the TMP series, magnetically driven, were developed on the experience made on the magnetic drive traction of previous AM series. These pumps are centrifugal, horizontal axis, close-coupled types; the bodies are entirely built with reinforced thermoplastic polymers, and the internal components are in ceramic. It means that any contact of metallic parts with the pumped fluid is avoided. This combination of materials was chosen to obtain the best performances on the smallest scale chemical pump possible. Special solutions and materials allow occasional dry running operation (starting from 15 min. up to **many hours in function of working conditions**).

Dry running capability requires R inner execution.

Available motor powers: kW 0,18÷1,1

Material versions: GFR/PP - CFF/E-CTFE

**TMA - ZMA**

Horizontal axle, self-priming pumps for chemicals, can be supplied with trolley, do not need any bottom valve.

Magnetic drive or single or doubled flushed mechanical seal design. Maximum negative suction head of 6 m depending on the nature of the chemicals (specific gravity, vapour tension).

Available motor powers: kW 0,25÷11

Material versions: PP - E-CTFE - PVDF - PVC

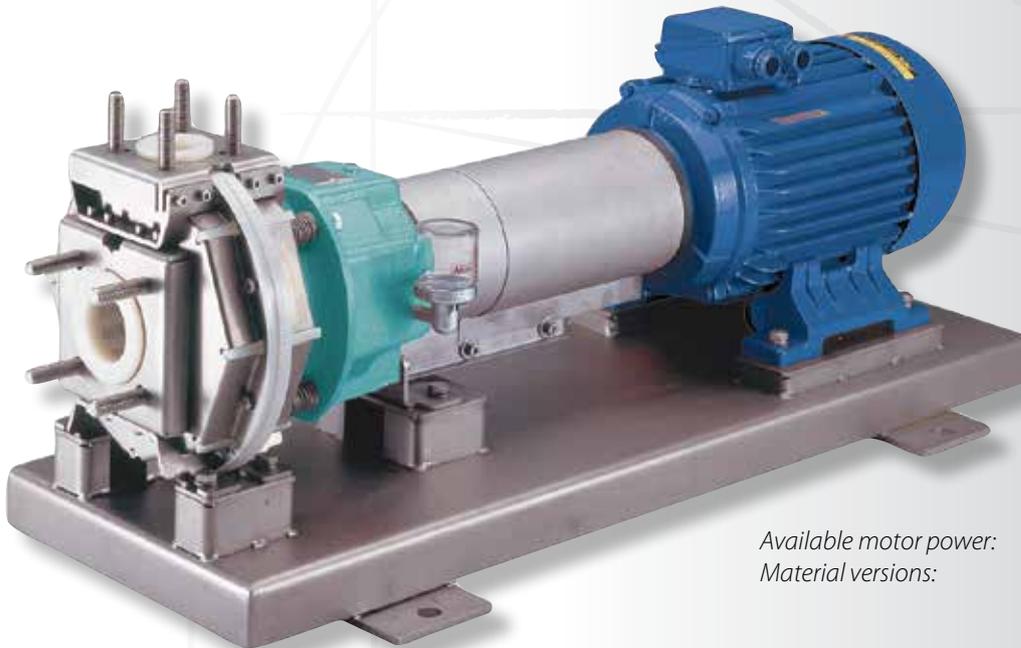


### Range FRONTIERA

Centrifugal chemical pumps moulded in pure thermoplastic material with many executions to offer different applications for pumping chemicals in the most efficient way. Innovation thanks to stainless steel use in the pump body as reinforcement.

The stainless steel is also used for the coupling guard and the base plate all according to the ISO regulations.

The employed material and external structures are identical for the whole project Frontiera. The inside solutions and type of motor connection are different. These pumps can be sealless or sealed; close coupled or long coupled executions.



Available motor power: kW 0,55÷15  
Material versions: PP - E-CTFE

**TGF** sealless centrifugal magnetical driven pumps according to ISO 2858 with the possibility to choose between different internal structures in order to offer many applications for pumping the chemicals in the most efficient way. One execution allows the accidental dry running.

**ZGF** Sealed pumps produced according to ISO 2858 regulations with own mechanical support, back pull out execution. As "process" pumps they are designed to accept commercially standardized mechanical seals. The bearings are oil lubricated.



**TMF** Hydraulic parts of the precedent range but in close coupled execution with the normalised electric motors installable without dismantling the pump.

**ZMF** sealed pumps, close-coupled execution, ready to fit normalised motors with additional bearing to withstand hydraulic loads.

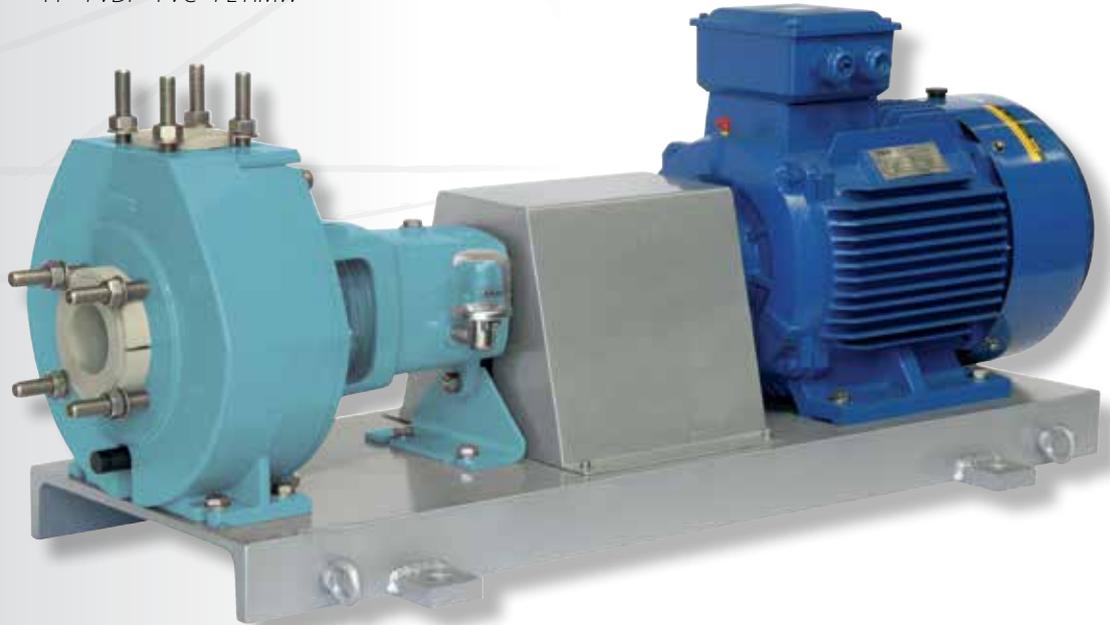
Available motor powers: kW 0,55÷15  
Material versions: PP - E-CTFE

**ZGE**

Wide, complete range of centrifugal chemical process pumps realized in thermoplastic pure materials and designed to accept commercially standardized mechanical seals. These long-coupled pumps, built in compliance with ISO 2858 (all normalized), are available either bare shaft or complete with base, for back pull out execution.

Available motor powers: kW 0,55÷200

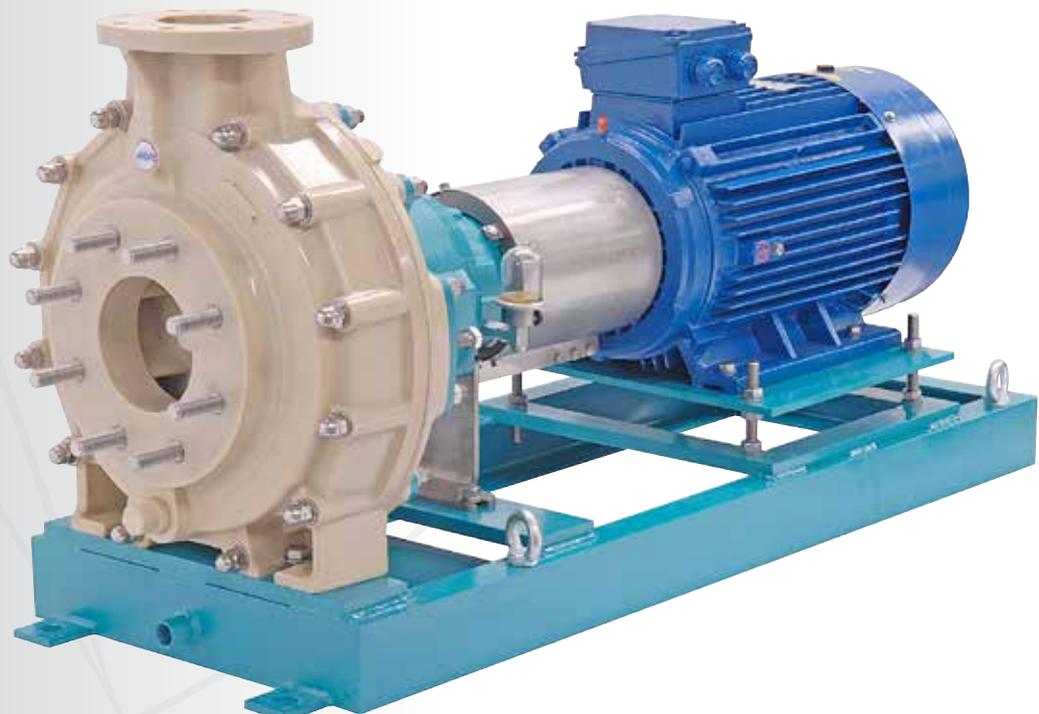
Material versions: PP - PVDF - PVC - PE HMW

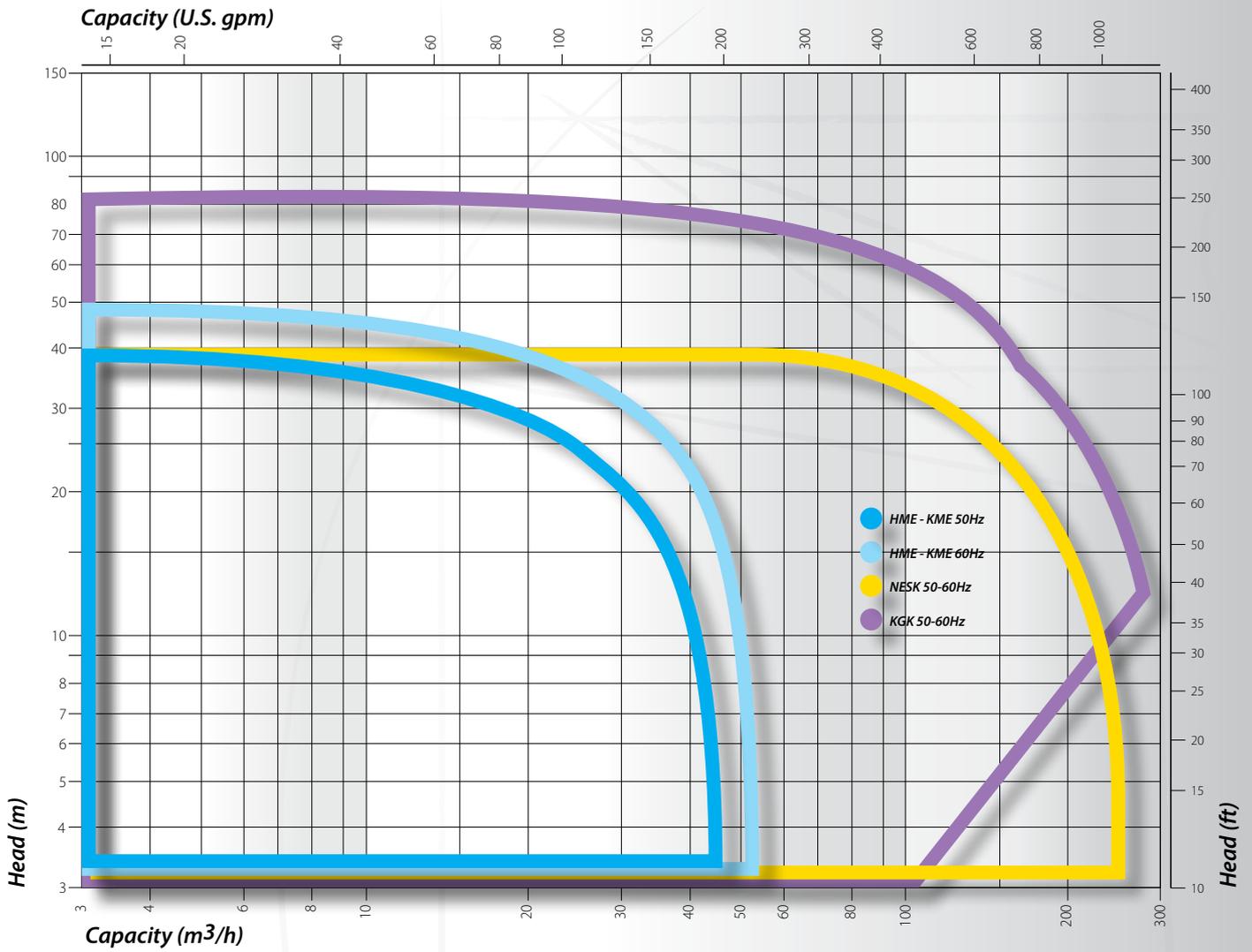
**SATURN**

ARGAL single stage centrifugal pump conforming to ANSI/ASME B73.1 regulations. The pump casing is made of FRP (thermosetting resins reinforced with fiberglass) which provide the casing with a considerable mechanical resistance comparable to metal alloy. The resin basic formula (epoxy vinyl ester) gives to the pump casing a resistance to all corrosive and abrasive acids. The combination of Chemical & Mechanical Resistance added to a manufacturing low cost leads SATURN range to be an important reference in different application fields as sea water (sanitization treatments, desalination, ...), domestic & industrial wastewater treatments, fume scrubbers, and all industrial plants handling chemical liquids. SATURN series comes in two versions: ZGS normalized (long-coupled) - ZMS close-coupled

Available motor powers: kW 3÷160

Material versions: FRP (Epoxy-vinylester Resins)





**QGN**

The NESK range are vertical external centrifugal pumps, mechanical sealed, to transfer or circulate of large volumes of corrosive fluids with the innovative semi-axial hydraulic flow.

The advantages of this design are:

- low noise operation
- high efficiency
- reduced wear on the inner parts.

The advantages of the vertical structure are:

- reduced overall dimensions
- easy maintenance on the normalized IEC motors
- air drain system.

Available motor powers: kW 4÷55  
 Material versions: GFR/PP – PVDF





**KGK**

Centrifugal long coupled sump pumps with column and pump body submerged in the pumped liquid; suction depth up to 4000 mm. For length above 2000 mm one intermediate guide is added to the one existent in the casing. Bearing are manufactured with ceramic oxides and Silicum carbide. In case of liquid is laden with mildly abrasive solids the guide bearings can be optionally flushed with external clean liquid. External different vapour seals systems to protect the upper mechanical parts form corrosion are optionally. Available as well as column and delivery pipe made of Epoxi Vinil Ester resin (FRP).

Available motor powers: kW 0,55÷45  
Material versions: GFR/PP - PVDF

**KME**

Close-coupled sump pumps with column and pump body submerged in the chemical. Lengths from 600 to 1500mm. and bearings made in ceramic or silicum carbide. An efficient dry vapour seal system has been designed to prevent the mechanical parts from corrosion. This pump model is our solution to users that want pumps of limited flow and head but to be fitted easily with IEC normalised motor readily available almost worldwide.

Available motor powers: kW 0,55÷11  
Material versions: GFR/PP – PVDF



**HME**

Centrifugal close-coupled sump pumps, self-priming in tank. Sealless without bearings, no bushings, wearing parts, with cantilevered shaft and strainer to prevent the accumulation of corrosive vapours. They can be mounted in-tank or out-of-tank. Standard lengths: 275 mm and 450 mm. Special motor powers for higher specific medium gravity are available.

Available motor powers: 0,25÷7,5 kW  
Material versions: GFR/PP – PVDF



## Main Applications



CHEMICAL &  
PETROCHEMICAL



RESINS



PAINT & VARNISH



ELETTROPLATING &  
SEMICONDUCTOR



DYEING & LAUNDRY



CERAMICS



COSMETIC



PHARMACEUTICAL



TEXTILE & LEATHER



MINING



LUBRICATING



EXPLOSIVES



WASTE TREATMENT



INKS & PRINT



NAVAL



METALWORKER



CONSTRUCTION  
INDUSTRY



ADHESIVES



PULP & PAPER



ENOLOGY



AGRICULTURE & BIOGAS



FOOD AND  
DAIRY FACTORIES



DRINKS & LIQUIDS



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