

Micro droplet production and manipulation is an exciting and rapidly growing area of research. Working with Sphere Fluidics, microfluidics expert Dolomite has launched Pico-Surf™ and Pico-Glide™, two innovative products allowing the formation of robust picodroplets.



Picodroplets

Picodroplets, droplets which are fractions of a millimetre in size, are a fascinating area of research. They are especially important where tests need to be conducted on only a few nanolitres of sample containing, for example, cells or DNA. Picodroplet technology enables scientists and researchers to perform thousands of simultaneous reactions on single cells and small populations of molecules contained within aqueous droplets.

Picodroplet technology benefits a broad range of applications including biotechnology, rapid antibody discovery, identification of novel cell lines (e.g. algal, hybridoma or microbial) and generation of new (bio)catalysts.

In collaboration with Sphere Fluidics, Dolomite has extended its micro droplet range to include novel surfactants which improve the robustness of picodroplets. Sphere Fluidics is commercializing new lab-on-a-chip and picodroplet technology developed at Cambridge University by company founders Professor Chris Abell and Professor Wilhelm Huck.

Novel surfactants

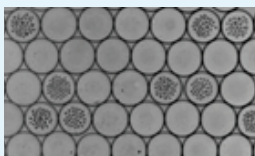
Pico-Surf™ is a formulated perfluorinated oil solution containing 2% fluoruous biocompatible copolymer surfactant **designed for generating and stabilizing aqueous picodroplets** which are compatible with a wide range of biological assays benefiting applications such as single cell emulsion PCR and cell biology studies.

Pico-Glide™ is a specially formulated perfluorinated oil solution containing 0.5% functional perfluoropolyether (PFPE) polymer that is active with plasma etched glass and PDMS surfaces forming an even and dense fluorophilic surface. Pico-Glide™ is an easy-to-use reagent for glass and PDMS microfluidic channels treatment that **assures that picodroplets do not adhere non-specifically but can glide smoothly through microfluidic channels.**

Available in 10ml and 50ml, the surfactants can be used together with Dolomite's novel picodroplet chip range including the Picodroplet Formation Chip and Picodroplet Reservoir Chip.

More application data will be published soon! In the meantime please contact us for any specific compatibility enquiry.

Examples of picodroplets and use of surfactants



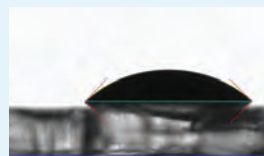
Algae growth in picodroplets stabilized with Pico-Surf™



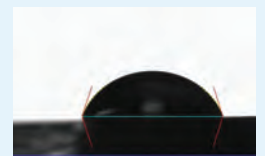
Water drop (8µl) on untreated glass slide, average contact angle of 7 degrees



Water drop (8µl) on Pico-Glide™ treated glass slide, average contact angle of 107 degrees



Hexadecane drop (6µl) on PDMS surface, av. contact angle of 44 degrees.



Hexadecane drop (6µl) on Pico-Glide™ treated PDMS surface, av. contact angle of 73 degrees

Innovators in microfluidic solutions

ISO 9001:2008 certified



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