



SAFELIA® 1 ml and 2,25 ml AUTOINJECTORS DESIGNED TO BE PATIENT AND SYRINGE FRIENDLY

Nemera's new generation 2-step autoinjector platforms are suitable for fluid to highly viscous injections. Safelia® has been designed to ease patient self-injection experience and to deliver even the most challenging drugs (viscous formulations up to several Centipoise, sustain released, concentrated, fragile and shear sensitive formulations, either in subcutaneous or intramuscular layers, on two platforms: up to 1ml or up to 2.25ml delivery).

Injectable formulations are the fastest growing segment in the pharmaceutical landscape. Biological therapies are increasingly used to treat a wide range of chronic diseases requiring frequent drug administration over a long period of time. Developing drug delivery devices able to administer the future pipeline of biological molecules is a challenge. Biotherapeutics tend to be more viscous, concentrated and administered in larger volumes. The issue of patient adherence to their treatment is an additional challenge. Pharmaceutical companies tend to provide treatments with less frequent injections, more concentrated, with larger volumes to be injected. Autoinjector platforms have to evolve to adapt to these new parameters as well as integrating an optimized patient experience. Other key factors that can improve patients adherence to their injectable treatment are pain reduction, less bruising and shorter delivery times.

Nemera's Safelia™ autoinjector platform has been designed as a new injection paradigm to respond to the challenge of handling new formulations taking patients into consideration. Safelia™ autoinjector :

- administers a large range of formulations and injection volumes; the platform can adapt by design to handle liquid injections to highly viscous formulations, taking care specifically of biologics, sustain released formulations and shier sensitive molecules up to 2,25ml injection volumes
- improves patient experience, with the possibility to reduce needle Gauge, reduce injection time, slowing down the needle penetration inside the body tissues and gives the possibility of a delayed retraction for viscous injections especially.

BREAKTHROUGH TECHNOLOGY OF AUTOINJECTOR

SAFELIA® - 2-STEP AUTOINJECTOR (AI) FOR 1 ML AND 2.25 ML FLUID AND VISCOUS FORMULATIONS

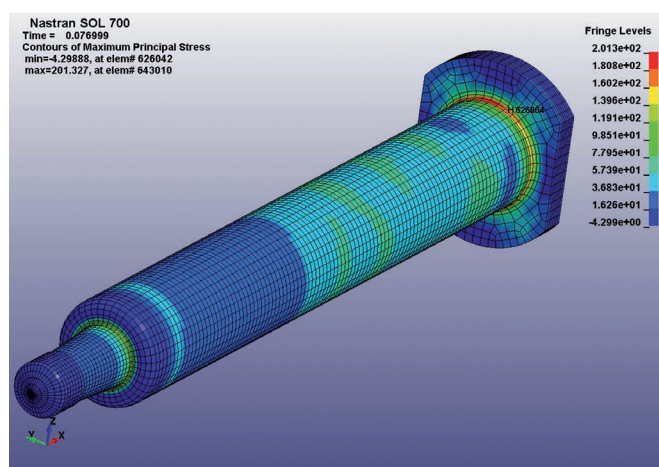
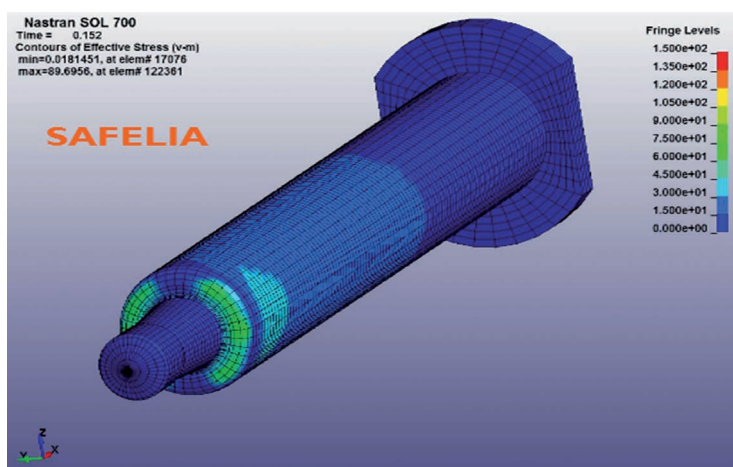
Expected benefits	Standard AI	Safelia® AI	Features
Inject viscous formulations with the same AI platform as for fluid injection	✗	✓	Inject in less than 8 sec. 500 cP 1 ml (23 GTW) 2 ml (21 GRW)
Risk of syringe breakage eliminated	✗	✓	No stress on syringe flanges
Enables increased spring force and use of small gauge needles (less patient pain) without risk of glass breakage	✗	✓	No stress on syringe flanges
Reduction of pain at needle insertion	✗	✓	Adjust needle insertion speed
Reduction of pain during injection	✗	✓	No initial injection peak Tailor force applied during injection course
Drug is delivered at the right depth	✗	✓	Needle insertion disconnected from injection





Safelia™ autoinjector design is patented. Specificities of Nemera's autoinjector design are the ability to handle high injection spring forces and deliveries of formulations in standard glass syringes. By design the coupling inside the autoinjector is not made around syringe's flanges, a structural weak part of the syringe, but around the syringe shoulder.

The spring release shock and the energy is absorbed by a rotating cam system and the energy is transmitted in compression and attenuated to the to the glass shoulder. Risks of breakage are therefore reduced by design during triggering of the autoinjector but also during transportation, drop and handling.



Safelia® autoinjector

- syringes held by the shoulders
- reduces stress on syringe (max 92 MPa Von Mises stress calculated at impact location, on syringe shoulder)
- Von Mises stress is in compression

Marketed autoinjector

- syringe is held by the flange
- High (201 Mpa max tensile stress calculated at the flange level) and long shock wave propagated along syringe barrel
- Von Mises Stress is in extension

Safelia™ autoinjector is now ready to be customized upon your formulations delivery specifications. Consult us for details.

Nemera has a well- know and established reputation in designing, developing and industrialising parenteral devices. As an example, **every day** over **5 million** diabetics rely on devices manufactured by Nemera over our 4 manufacturing plants with harmonized high standard quality. Upstream of production of pens, autoinjectors, implanters, we rely on the expertise of our Innovation Centre of Development. Safelia® development has benefited from the implication of creative design and human factor specialists, mechanical engineering, testing in our world-class Laboratory, manufacturing and assembly knowledge and extensive mathematical modelling.

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we put
patients
first