

Dispenser for Irritating Agents

Neutz, J.; Eckl, W.

Fraunhofer Institut für Chemische Technologie, D-76327 Pfinztal

Weller, F.

Recan Bauteile GmbH, D-73432 Aalen-Waldhausen

Abstract:

The dispersion of irritating aerosols is one possibility to keep people in distance of important buildings or for self defence purposes. The development and testing of a handheld dispenser for irritating agents is described.

A gas generator is used as an actuator to expel the irritation aerosol. The whole system is based on a two chamber design with a piston as separation between the aerosol storage and the gas generator unit. Different nozzle diameters enable the variation of the spray characteristics and the adaptation for different irritating agents. The basic system was tested with colourised water as a dummy material. The tested nozzles ranged from 0.5 mm to 1.5 mm inner diameter. As actuator pressurized gas and gas generator material with electrical igniters was used. The tested gas generator composition is based on Tri – Amino – Guanidiniumnitrate (TAGN). The pressure inside the combustion chamber was measured with a pressure gauge and the spray characteristic was visualized by a video camera. Investigations on target diagrams for a distance of 1.5 m and 2 m and on maximum range were performed. The average target diameter is 200 mm and the maximum range is 4.5 m.