

Aerosol defense sprays have been proven to greatly assist law enforcement and corrections officers in resolving difficult situations. When used properly, they are a safe and effective way to accelerate the intensity of force without increasing the likelihood of serious injury or death.

All CQB defense spray formulations referenced in this document meet the following quality standards:

- **Safe for use with Taser® brand energy weapons**
- **Non-toxic**
- **Non-flammable**
- **Contain no carcinogens, mutagens, teratogens or hazardous ingredients of any kind**

TERMINOLOGY

- oleoresin** (*n.*) A naturally occurring mixture of oil and a resin extracted from various plants.
- capsicum** (*n.*) A genus of plants, the ripe fruit of the capsicum mimum (or frutescans), contains the active principle capsaicin.
- capsaicin** (*n.*) A colorless, pungent crystalline compound that is derived from capsicum and is a strong irritant to skin and mucous membranes.

Though clearly not the same, frequently the terms *capsaicin* and *oleoresin capsicum* are used interchangeably. Some defense spray manufacturers state that the active ingredient in their pepper spray is oleoresin capsicum, though this statement is not accurate.

Chemists and toxicologists define an *active ingredient* as the principal ingredient in a formulation that performs the intended function of the formula. In view of the definition provided above, the active ingredient in a pepper spray that contains oleoresin capsicum is, in fact, capsaicin.

Capsaicin is a complex of related components ($C_{18}H_{27}NO_{31}$) named *capsaicinoids* that all work together to produce the "pungency" or burning sensation that occurs when pepper spray comes in contact with skin or mucous membranes.

All hot peppers contain capsaicinoids. Capsaicin is the strongest and most commonly mentioned of the capsaicinoid family. It is so hot that a single drop diluted in 100,000 drops of water will produce a blistering of the tongue. In its pure form, capsaicin is a white powder and has a Scoville Heat Rating of 16,000,000.