

TASER® SAFE AEROSOL PROJECTORS



TECHNOLOGY • TACTICS • TRAINING



EXECUTIVE BRIEF

PREFACE

The rising acceptance of TASER® brand energy weapons and the new force applications that have emerged as a result of its widespread popularity require that agencies implementing the use of TASER® take great care to ensure compatibility with their aerosol defense sprays.

Emerging new law enforcement and corrections Instructor Certification Programs (ICP) now encompass Active Simulation training, placing high priority on the realities of control before, during and after aerosol deployment and the transition to other force options such as TASER®.

The purpose of this document is to provide law enforcement and corrections policy makers, procurement personnel, practitioners, defense and prosecution attorneys with precise information regarding the suitable considerations one might undertake prior to the purchase, policy development, issuance and deployment of aerosol defense sprays.

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EXTERNAL SOURCES

American Spice Trade Association (ASTA)

American Organization of Analytical Chemists
(AOAC)

National Institute of Justice, *The Effectiveness
and Safety of Pepper Spray*, April 2003.

U.S. Army Aberdeen Test Center, Production
Qualification Test (PQT), September 2002.

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.

HISTORY

- 1912** Wilbur Scoville develops original Scoville sensory method of heat analysis.
- 1960s** The American Spice Trade Association (ASTA) slightly revised the Scoville sensory method and adopted ASTA Method 21.0 (sensory method). Like the Scoville method, this standard was highly subjective and had a large variability of results.
- 1980s** The ASTA developed and introduced the ASTA Method 21.1 (HPLC method).
- 1996** The American Organization of Analytical Chemists (AOAC) issued its Official Method 995.03: *Capsaicinoids in Capsicums and Their Extractives*. Like ASTA methods 21.0 and 21.1, this method maintained pure capsaicin as 15 million SHUs.
- 1997** The ASTA revised analytical methods 21.0 (sensory method) and 21.1 (HPLC method). While maintaining that pure capsaicin was 15 million SHUs, these methods had other problems. For instance, they were both developed by a single laboratory without input from other industry experts, and they required the use of some chemicals no longer deemed safe by the Federal Government.
- 1998** The ASTA introduced methods 21.2 (sensory method) and 21.3 (HPLC method) and for the first time, classified the heat rating of pure capsaicin as 16 million SHUs.
- 1999** The AOAC revised Method 995.03 to state that pure capsaicin was 16 million SHUs, coinciding with ASTA Method 21.3.
- 2001** The Executive Committee of the ASTA Technical Group declared that ASTA methods 21.0 and 21.1 were now obsolete.
- 2003** AOAC revised Method 995.03.

The analysis for the heat-bearing components of red peppers was developed by pharmacologist Wilbur Scoville in 1912. His original “Scoville Method” used a panel of five human taste-testers to determine the Scoville Heat Units (SHU), or heat level, of various hot peppers. The SHU became the standard by which heat is still measured today.

However, as analytical instrumentation improved and analytical organizations, including the American Spice Trade Association (ASTA) and the American Organization of Analytical Chemists (AOAC), began to collaborate, the methodology for heat determination evolved. The most significant revision over the years has been to redefine the SHU value of pure capsaicin from its original estimate of 15 million SHUs to the accurate, scientifically proven value of 16 million SHUs.

Standard Concentration:

$$0.0075 \text{ g/100 mL} = 0.075 \text{ mg/mL} = C_s$$

Sample Weight:

$$20.24 \text{ g} = W_t$$

Sample Volume:

$$200 \text{ mL} = V$$

Standard Area Count:

$$= 853166$$

Sample Area Count:

$$NDC = 131894$$

$$CAP = 1040082$$

$$DCH = 696231$$

Heat Factors, H:

$$NDC = 9300$$

$$CAP = 16100$$

$$DHC = 16100$$

$$STD = 9200$$

FLU Detector Response Factors, R:

$$NDC = 0.92$$

$$CAP = 0.88$$

$$DHC = 0.93$$

$$STD = 100$$

AOAC Method 995.03

Issued June 2003

Calculations provided by

AOAC, 2003

TOTAL HEAT

SH (NDC) =

$$(A \text{ NDC} / A \text{ STD}) \times (C_s / W_t) \times (V / R \text{ NDC}) \times 9300 \\ (131894/853166) \times (0.075/20.24) \times (200/0.92) \times 9300 \\ (0.1546) \times (0.003706) \times (217.391) \times 9300 = \mathbf{1158}$$

SH (CAP) =

$$(A \text{ CAP} / A \text{ STD}) \times (C_s / W_t) \times (V/R \text{ CAP}) \times 16100 \\ (1040082/853166) \times (0.075/20.24) \times 200/0.88 \times 16100 \\ (1.2191) \times (0.003706) \times (227.273) \times 16100 = \mathbf{16532}$$

SH (DHC) =

$$(A \text{ DHC} / A \text{ STD}) \times (C_s / W_t) \times (V/R \text{ DHC}) \times 16100 \\ (696231/853166) \times (0.075/20.24) \times (200/0.93) \times 16100 \\ (0.8161) \times (0.003706) \times (215.054) \times 16100 = \mathbf{10472}$$

TOTAL HEAT =

$$1158 + 16532 + 10472 = 28162 = \mathbf{28200 \text{ (Rounded)}}$$

TOTAL CAPSAICINOIDS

% NDC =

$$(A \text{ NDC} / A \text{ STD}) \times (C_s/W_t) \times (V/R \text{ NDC}) \times (100/1000) \\ (131894/853166) \times (0.075/20.24) \times (200/0.93) \times 0.1 \\ .1546 \times 0.003706 \times 217.391 \times 0.1 = \mathbf{0.012 \%}$$

% CAP =

$$(A \text{ CAP} / A \text{ STD}) \times (C_s / W_t) \times (V/R \text{ CAP}) \times (100/1000) \\ (1040082/853166) \times (0.075/20.24) \times (200/0.88) \times 0.1 \\ (1.2191) \times (0.003706) \times (227.273) \times 0.1 = \mathbf{0.103 \%}$$

% DHC =

$$(A \text{ DHC} / A \text{ STD}) \times (C_s / W_t) \times (V/R \text{ DHC}) \times 100/1000 \\ (696231/853166) \times (0.075/20.24) \times (200/0.93) \times 0.1 \\ (0.8161) \times (0.003706) \times (215.054) \times 0.1 = \mathbf{0.065 \%}$$

TOTAL CAPSAICINOIDS =

$$0.012 \% + 0.103 \% + 0.065 \% = \mathbf{0.180 \%}$$

TOTAL HEAT

SH (NDC) =

$$(A \text{ NDC} / A \text{ STD}) \times (C_s / C_x) \times (H \text{ NDC} / R \text{ NDC}) \\ (131894/853166) \times (0.075/101.2) \times (9.3 \text{ E}+06/0.92) \\ (0.1546) \times (.0007411) \times 10.109 \text{ E}+06 = \mathbf{1158}$$

SH (CAP) =

$$(A \text{ CAP} / A \text{ STD}) \times (C_s / C_x) \times (H \text{ CAP} / R \text{ CAP}) \\ (1040082/853166) \times (0.075/101.2) \times (16 \text{ E}+06/0.88) \\ (1.2191) \times (0.0007411) \times 18.18 \text{ E}+06 = \mathbf{16425}$$

SH (DHC) =

$$(A \text{ DHC} / A \text{ STD}) \times (C_s / C_x) \times (H \text{ DHC} / R \text{ DHC}) \\ (696231/853166) \times (0.075/101.2) \times (16 \text{ E}+06/0.93) \\ (0.8161) \times (.0007411) \times 17.20 \text{ E}+06 = \mathbf{10403}$$

TOTAL HEAT =

$$1158 + 16425 + 10403 = 27986 = \mathbf{28000 \text{ (Rounded)}}$$

TOTAL CAPSAICINOIDS

% NDC =

$$(A \text{ NDC} / A \text{ STD}) \times (C_s / C_x) \times (100 / R \text{ NDC}) \\ (131894/853166) \times (0.075/101.2) \times (100/0.93) \\ .1546 \times 0.0007411 \times 107.53 = \mathbf{0.012 \%}$$

% CAP =

$$(A \text{ CAP} / A \text{ STD}) \times (C_s / C_x) \times (100 / R \text{ CAP}) \\ (1040082/853166) \times (0.075/101.2) \times (100/0.88) \\ (1.2191) \times (0.0007411) \times (113.64) = \mathbf{0.103 \%}$$

% DHC =

$$(A \text{ DHC} / A \text{ STD}) \times (C_s / C_x) \times (100 / R \text{ DHC}) \\ (696231/853166) \times (0.075/101.2) \times (100/0.93) \\ (0.8161) \times (.0007411) \times (107.53) = \mathbf{0.065 \%}$$

TOTAL CAPSAICINOIDS =

$$0.012 \% + 0.103 \% + 0.065 \% = \mathbf{0.180 \%}$$

Standard Concentration:

$$0.0075 \text{ g}/100 \text{ mL} = 0.075 \text{ mg/mL} = C_s$$

Sample Concentration:

$$20.24 \text{ g}/200 \text{ mL} = 101.2 \text{ mg/mL} = C_x$$

Standard Area Count:

$$= 853166$$

Sample Area Count:

$$\text{NDC} = 131894$$

$$\text{CAP} = 1040082$$

$$\text{DCH} = 696231$$

Heat Factors, H:

$$\text{NDC} = 9.3 \text{ E}+06$$

$$\text{CAP} = 16.0 \text{ E}+06$$

$$\text{DHC} = 16.0 \text{ E}+06$$

$$\text{STD} = 9.2 \text{ E}+06$$

FLU Detector Response Factors, R:

$$\text{NDC} = 0.92$$

$$\text{CAP} = 0.88$$

$$\text{DHC} = 0.93$$

$$\text{STD} = 1.00$$

ASTA Method 21.3

Issued December 1998

Calculations provided by

ASTA, 2003

Due to contemporary changes in industry standards, many agencies that have purchased the same brand of defense spray for several years continue to purchase and issue to their officers improperly labeled canisters where the capsaicinoid content is either misstated high or not present on the label at all.

Agencies must take careful steps to ensure that current issue defense sprays are properly labeled in accordance with AOAC Method 995.03 and ASTA Method 21.3.

CONSEQUENCES

With regard to the potential consequences of purchasing an improperly labeled aerosol projector, it is essential to consider:

If a label contains inexact information, particularly as it relates to the pungency or strength of the formulation, a plaintiff's counsel may argue that the agency was not diligent or worse, negligent, by not taking appropriate steps to ensure that the defense spray being used is in fact labeled accurately.

For example, an officer may rely on the efficacy of the product at the stated level. If the stated level is incorrect and the amount of total capsaicinoids is misstated high, but in reality is lower, it could be established that the product used was problematic in that it was not sufficient to accomplish the stated purpose, and as a result, caused an unnecessary escalation in the use of force.

Use the chart below to recognize how recent changes in test methodology affect defense spray labeling. Compare the data in the chart below to the information on your current defense spray's label.

Prior to December 1998 In accordance with ASTA 21.1

- Pure capsaicin = **15,000,000**
- 2,000,000 is **13.3%** of 15,000,000
- 10% of 2,000,000 is **1.33%** of 15,000,000
- 5% of 2,000,000 is **0.67%** of 15,000,000

After December 1998 In accordance with AOAC Method 995.03 & ASTA 21.3

- Pure capsaicin = **16,000,000**
- 2,000,000 is **12.5%** of 16,000,000
- 10% of 2,000,000 is **1.25%** of 16,000,000
- 5% of 2,000,000 is **0.62%** of 16,000,000

HOW HOT IS YOUR SPRAY?

The following chart shows how a variety of current brands rate in terms of Scoville value and percentage of total capsaicinoids—the true determinants of the pungency or strength of all defense sprays.

The Scoville Heat Units provided are in accordance with the most current editions of both the AOAC Method 995.03 and the ASTA Method 21.3. The total capsaicinoids are accurate to a tolerance of ± 0.2 of a percentage point. Pure capsaicin is included for comparison purposes only.

Brand Name	Canister Wt/ Concentration	Scoville Heat Units/ Scoville Value	Total Capsaicinoids
Pure Capsaicin	10%	16,000,000/1,600,000	10%
American Defense (ADR)	10%	2,000,000/200,000	1.25%
BodyGuard (LE-10)	10%	2,000,000/200,000	1.25%
CQB (Level III)	10%	2,000,000/200,000	1.25%
Sabre Red	10%	2,000,000/200,000	1.25%
Cap-Stun	5.5%	2,509,090/138,900	0.86%
CQB (US DoD)	5.5%	2,000,000/110,000	0.69%
Fox Labs	2%	5,300,000/106,000	0.66%
American Defense (ADW)	5%	2,000,000/100,000	0.62%
ATF™	5%	2,000,000/100,000	0.62%
BodyGuard (LE-5)	5%	2,000,000/100,000	0.62%
CQB (Level II)	5%	2,000,000/100,000	0.62%
Punch II & III	5%	2,000,000/100,000	0.62%
Def-Tec (X2)	20%	320,000/64,000	0.40%
Federal Labs	5.5%	1,000,000/55,000	0.34%
Sabre 5.5	5.5%	1,000,000/55,000	0.34%
American Defense (ADB)	10%	500,000/50,000	0.31%
CQB (Level I)	10%	500,000/50,000	0.31%
Sabre Defense	10%	500,000/50,000	0.31%
CTS (1441)	11%	363,635/40,000	0.25%
Def-Tec (First Defense)	10%	320,000/32,000	0.20%
Federal Labs (Pepper 10)	10%	320,000/32,000	0.20%
CTS (1440)	10%	288,000/28,800	0.18%

Toxicologists recommend that agencies use only defense sprays that are labeled with all of their components as well as the absolute concentration of total capsaicinoids, rather than just the oleoresin capsicum percentage and Scoville value

Presented below are the four (4) most common defense spray formulations used by U.S. law enforcement agencies. These formulations reflect the appropriate way each level should be labeled, in accordance with AOAC Method 995.03 and ASTA Method 21.3 in their most current editions:

Listed according to popularity and volume sold.

U.S. DoD

Active Ingredient: 5.5% capsaicin
 Scoville Heat Units: 2,000,000
 Scoville Value: 110,000
 Total Capsaicinoids: 0.69%

LEVEL III

Active Ingredient: 10% capsaicin
 Scoville Heat Units: 2,000,000
 Scoville Value: 200,000
 Total Capsaicinoids: 1.25%

LEVEL II

Active Ingredient: 5% capsaicin
 Scoville Heat Units: 2,000,000
 Scoville Value: 100,000
 Total Capsaicinoids: 0.62%

LEVEL I

Active Ingredient: 10% capsaicin
 Scoville Heat Units: 500,000
 Scoville Value: 50,000
 Total Capsaicinoids: 0.31%

It is a misrepresentation of fact that defense spray formulations must contain water or be water-based in order to be non-flammable or safe for use with TASER® brand energy weapons. Just because a particular brand is water-based, DO NOT assume it is safe for use in conjunction with a TASER® deployment.

The true determinant of a low current electrical discharge weapon (TASER®) to ignite vapors or residue from a defense spray weapon is the flash-point of the formula. Since it is the vapor of the liquid, not the liquid itself that burns, vapor generation becomes the primary factor in determining a fire hazard.

FLASH-POINT TESTING

Flash point is the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid. The flash point is normally an indication of susceptibility to ignition.

The U.S. Occupational Health and Safety Administration (OSHA) defines liquid forms by their flash points:

- A *nonflammable liquid* is any liquid having a flash point at or above 200° F.
- A *combustible liquid* is any liquid having a flash point at or above 100° F.
- A *flammable liquid* is any liquid having a flash point below 100° F.

It should be mentioned that flash point was selected as the basis for classification of flammable and combustible liquids because it is directly related to a liquid's ability to generate vapor, i.e., its volatility.

The rising acceptance of TASER® brand energy weapons and the new force applications that have emerged as a result of its widespread popularity require that agencies implementing the use of TASER® take great care to ensure compatibility with their aerosol defense sprays.

Agencies are strongly encouraged to obtain current year Material Safety Data Sheets (MSDS) from the defense spray manufacturer with the formula's flash point clearly stated in the section entitled "Physical Properties." If it is not clearly stated on the MSDS, ask for it! Reputable manufacturers will have the MSDS readily available for downloading from their company's website in PDF format.

U.S. DoD

Active Ingredient:	5.5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	110,000
Total Capsaicinoids:	0.69%
Delivery System / Part ID:	Tactical Stream™ / n/a Stream / n/a Cone / 55243 Pro-Foam™ / n/a Fog / n/a

LEVEL III

Active Ingredient:	10% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	200,000
Total Capsaicinoids:	1.25%
Delivery System / Part ID:	Tactical Stream™ / n/a Stream / n/a Cone / 54243 Pro-Foam™ / n/a Fog / n/a

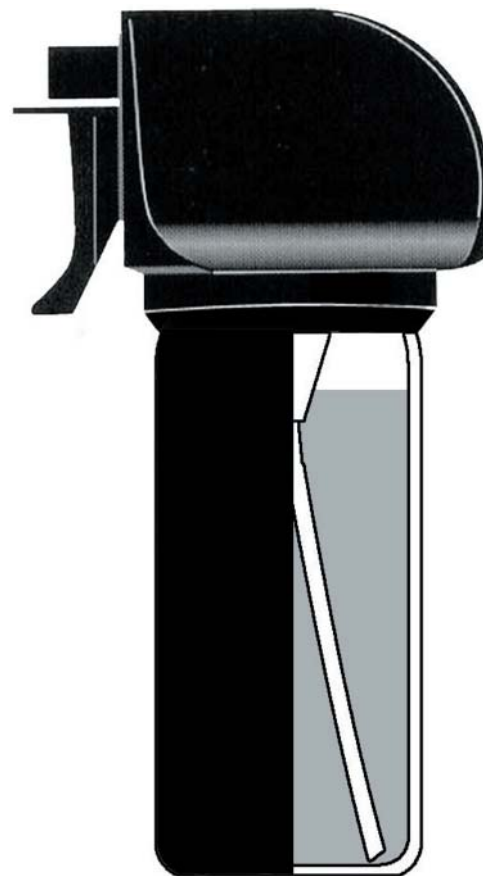
LEVEL II

Active Ingredient:	5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	100,000
Total Capsaicinoids:	0.62%
Delivery System / Part ID:	Tactical Stream™ / n/a Stream / n/a Cone / 53243 Pro-Foam™ / n/a Fog / n/a

LEVEL I

Active Ingredient:	10% capsaicin
Scoville Heat Units:	500,000
Scoville Value:	50,000
Total Capsaicinoids:	0.31%
Delivery System / Part ID:	Tactical Stream™ / n/a Stream / n/a Cone / 52243 Pro-Foam™ / n/a Fog / n/a

Labeled in accordance with AOAC 995.03 and ASTA 21.3
in their most current editions.



SPECIFICATIONS

Subject to change without notice.

Height: 4.38" / 11.13 cm

Diameter: 1.37" / 3.48 cm

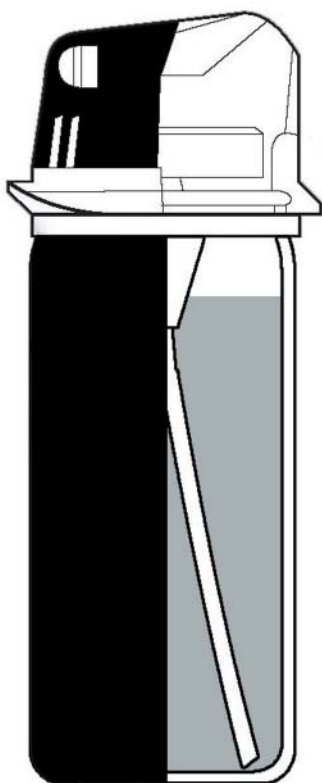
Fluid Ounces: 1.47 oz / 43.47 ml

Firing Mechanism: Trigger-top

Warranty: Five (5) years from
date of manufacture

Canister Material: Seamless
Aluminum Rated 2Q

MK-2 PROJECTOR SPECIFICATIONS



SPECIFICATIONS

Subject to change without notice.

Height: 4.00" / 10.16 cm

Diameter: 1.37" / 3.48 cm

Fluid Ounces: 1.47 oz / 43.47 ml

Firing Mechanism: Spring-loaded flip-top

Warranty: Five (5) years from date of manufacture

Canister Material: Seamless Aluminum Rated 2Q

U.S. DoD

Active Ingredient:	5.5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	110,000
Total Capsaicinoids:	0.69%
Delivery System / Part ID:	Tactical Stream™/55211 Stream / 55212 Cone / 55213 Pro-Foam™ / 55214 Fog / 55215

LEVEL III

Active Ingredient:	10% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	200,000
Total Capsaicinoids:	1.25%
Delivery System / Part ID:	Tactical Stream™ / 54211 Stream / 54212 Cone / 54213 Pro-Foam™ / 54214 Fog / 54215

LEVEL II

Active Ingredient:	5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	100,000
Total Capsaicinoids:	0.62%
Delivery System / Part ID:	Tactical Stream™ / 53211 Stream / 53212 Cone / 53213 Pro-Foam™ / 53214 Fog / 53215

LEVEL I

Active Ingredient:	10% capsaicin
Scoville Heat Units:	500,000
Scoville Value:	50,000
Total Capsaicinoids:	0.31%
Delivery System / Part ID:	Tactical Stream™/52211 Stream / 52212 Cone / 52213 Pro-Foam™ / 52214 Fog / 52215

Labeled in accordance with AOAC 995.03 and ASTA 21.3
in their most current editions.

U.S. DoD

Active Ingredient:	5.5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	110,000
Total Capsaicinoids:	0.69%
Delivery System / Part ID:	Tactical Stream™/55311 Stream / 55312 Cone / 55313 Pro-Foam™ / 55314 Fog / 55315

LEVEL III

Active Ingredient:	10% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	200,000
Total Capsaicinoids:	1.25%
Delivery System / Part ID:	Tactical Stream™ / 54311 Stream / 54312 Cone / 54313 Pro-Foam™ / 54314 Fog / 54315

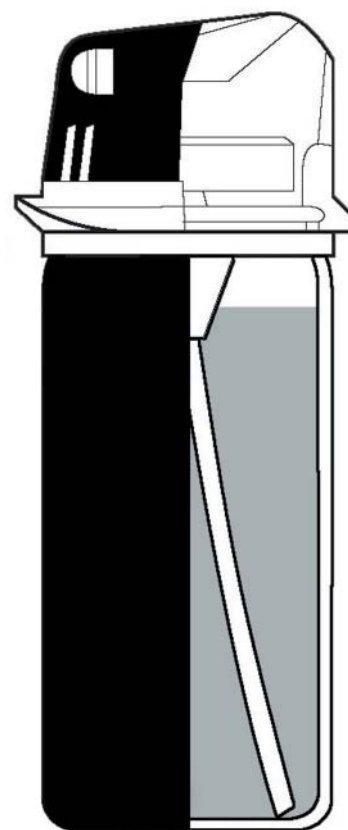
LEVEL II

Active Ingredient:	5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	100,000
Total Capsaicinoids:	0.62%
Delivery System / Part ID:	Tactical Stream™ / 53311 Stream / 53312 Cone / 53313 Pro-Foam™ / 53314 Fog / 53315

LEVEL I

Active Ingredient:	10% capsaicin
Scoville Heat Units:	500,000
Scoville Value:	50,000
Total Capsaicinoids:	0.31%
Delivery System / Part ID:	Tactical Stream™/52311 Stream / 52312 Cone / 52313 Pro-Foam™ / 52314 Fog / 52315

Labeled in accordance with AOAC 995.03 and ASTA 21.3
in their most current editions.



SPECIFICATIONS

Subject to change without notice.

Height: 4.35" / 11.05 cm

Diameter: 1.50" / 3.81 cm

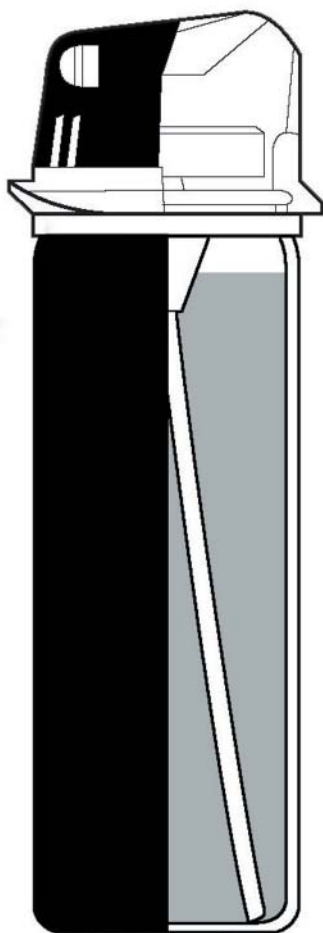
Fluid Ounces: 1.98 oz / 58.56 ml

Firing Mechanism: Spring-loaded flip-top

Warranty: Five (5) years from date of manufacture

Canister Material: Seamless Aluminum Rated 2Q

MK-X PROJECTOR SPECIFICATIONS



SPECIFICATIONS

Subject to change without notice.

Height: 4.88" / 12.40 cm

Diameter: 1.37" / 3.48 cm

Fluid Ounces: 1.98 oz / 58.56 ml

Firing Mechanism: Spring-loaded flip-top

Warranty: Five (5) years from date of manufacture

Canister Material: Seamless Aluminum Rated 2Q

U.S. DoD

Active Ingredient:	5.5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	110,000
Total Capsaicinoids:	0.69%
Delivery System / Part ID:	Tactical Stream™/55X11 Stream / 55X12 Cone / 55X13 Pro-Foam™ / 55X14 Fog / 55X15

LEVEL III

Active Ingredient:	10% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	200,000
Total Capsaicinoids:	1.25%
Delivery System / Part ID:	Tactical Stream™ / 54X11 Stream / 54X12 Cone / 54X13 Pro-Foam™ / 54X14 Fog / 54X15

LEVEL II

Active Ingredient:	5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	100,000
Total Capsaicinoids:	0.62%
Delivery System / Part ID:	Tactical Stream™ / 53X11 Stream / 53X12 Cone / 53X13 Pro-Foam™ / 53X14 Fog / 53X15

LEVEL I

Active Ingredient:	10% capsaicin
Scoville Heat Units:	500,000
Scoville Value:	50,000
Total Capsaicinoids:	0.31%
Delivery System / Part ID:	Tactical Stream™/52X11 Stream / 52X12 Cone / 52X13 Pro-Foam™ / 52X14 Fog / 52X15

Labeled in accordance with AOAC 995.03 and ASTA 21.3
in their most current editions.

U.S. DoD

Active Ingredient:	5.5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	110,000
Total Capsaicinoids:	0.69%
Delivery System / Part ID:	Tactical Stream™/55411
	Stream / 55412
	Cone / 55413
	Pro-Foam™ / 55414
	Fog / 55415

LEVEL III

Active Ingredient:	10% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	200,000
Total Capsaicinoids:	1.25%
Delivery System / Part ID:	Tactical Stream™ / 54411
	Stream / 54412
	Cone / 54413
	Pro-Foam™ / 54414
	Fog / 54415

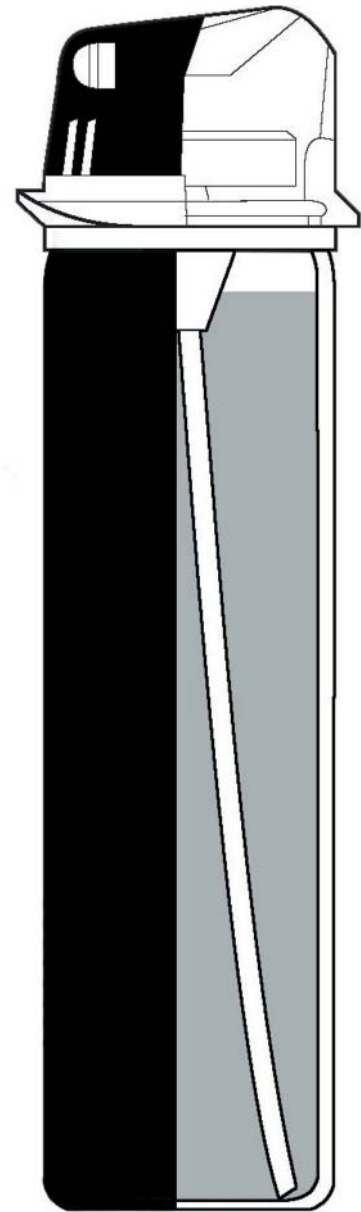
LEVEL II

Active Ingredient:	5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	100,000
Total Capsaicinoids:	0.62%
Delivery System / Part ID:	Tactical Stream™ / 53411
	Stream / 53412
	Cone / 53413
	Pro-Foam™ / 53414
	Fog / 53415

LEVEL I

Active Ingredient:	10% capsaicin
Scoville Heat Units:	500,000
Scoville Value:	50,000
Total Capsaicinoids:	0.31%
Delivery System / Part ID:	Tactical Stream™/52411
	Stream / 52412
	Cone / 52413
	Pro-Foam™ / 52414
	Fog / 52415

Labeled in accordance with AOAC 995.03 and ASTA 21.3
in their most current editions.



SPECIFICATIONS

Subject to change without notice.

Height: 6.25" / 15.88 cm

Diameter: 1.50" / 3.81 cm

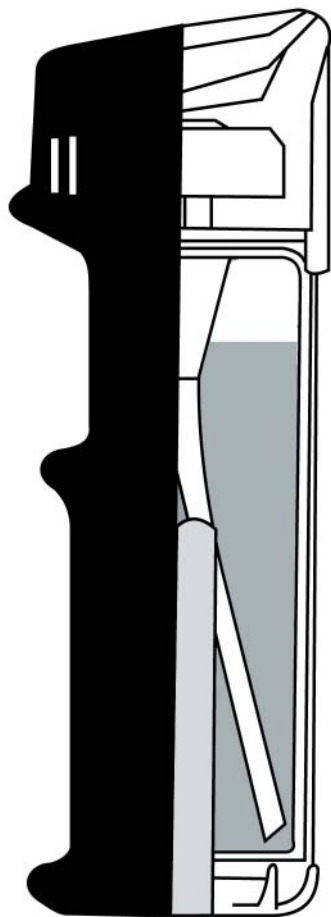
Fluid Ounces: 3.53 oz / 104.39 ml

Firing Mechanism: Spring-loaded flip-top

Warranty: Five (5) years from date of manufacture

Canister Material: Seamless Aluminum Rated 2Q

MK-6 PROJECTOR SPECIFICATIONS



SPECIFICATIONS

Subject to change without notice.

Height: 4.62" / 11.73 cm

Diameter: 1.38" / 3.51 cm

Fluid Ounces: 0.75 oz / 22.18 ml

Firing Mechanism: Spring-loaded flip-top

Warranty: Five (5) years from date of manufacture

Canister Material: Seamless Aluminum Rated 2Q

U.S. DoD

Active Ingredient:	5.5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	110,000
Total Capsaicinoids:	0.69%
Delivery System / Part ID:	Tactical Stream™/n/a Stream / 55612 Cone / n/a Pro-Foam™ / 55614 Fog / n/a

LEVEL III

Active Ingredient:	10% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	200,000
Total Capsaicinoids:	1.25%
Delivery System / Part ID:	Tactical Stream™ / n/a Stream / 54612 Cone / n/a Pro-Foam™ / 54614 Fog / n/a

LEVEL II

Active Ingredient:	5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	100,000
Total Capsaicinoids:	0.62%
Delivery System / Part ID:	Tactical Stream™ / n/a Stream / 53612 Cone / n/a Pro-Foam™ / 53614 Fog / n/a

LEVEL I

Active Ingredient:	10% capsaicin
Scoville Heat Units:	500,000
Scoville Value:	50,000
Total Capsaicinoids:	0.31%
Delivery System / Part ID:	Tactical Stream™/ n/a Stream / 52612 Cone / n/a Pro-Foam™ / 52614 Fog / n/a

Labeled in accordance with AOAC 995.03 and ASTA 21.3
in their most current editions.

MK-9 PROJECTOR SPECIFICATIONS

U.S. DoD

Active Ingredient:	5.5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	110,000
Total Capsaicinoids:	0.69%
Delivery System / Part ID:	Tactical Stream™/55951
	Stream / n/a
	Cone / n/a
	Pro-Foam™ / 55954
	High-capacity Fog / 55955

LEVEL III

Active Ingredient:	10% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	200,000
Total Capsaicinoids:	1.25%
Delivery System / Part ID:	Tactical Stream™ / 54951
	Stream / n/a
	Cone / n/a
	Pro-Foam™ / 54954
	High-capacity Fog / 54955

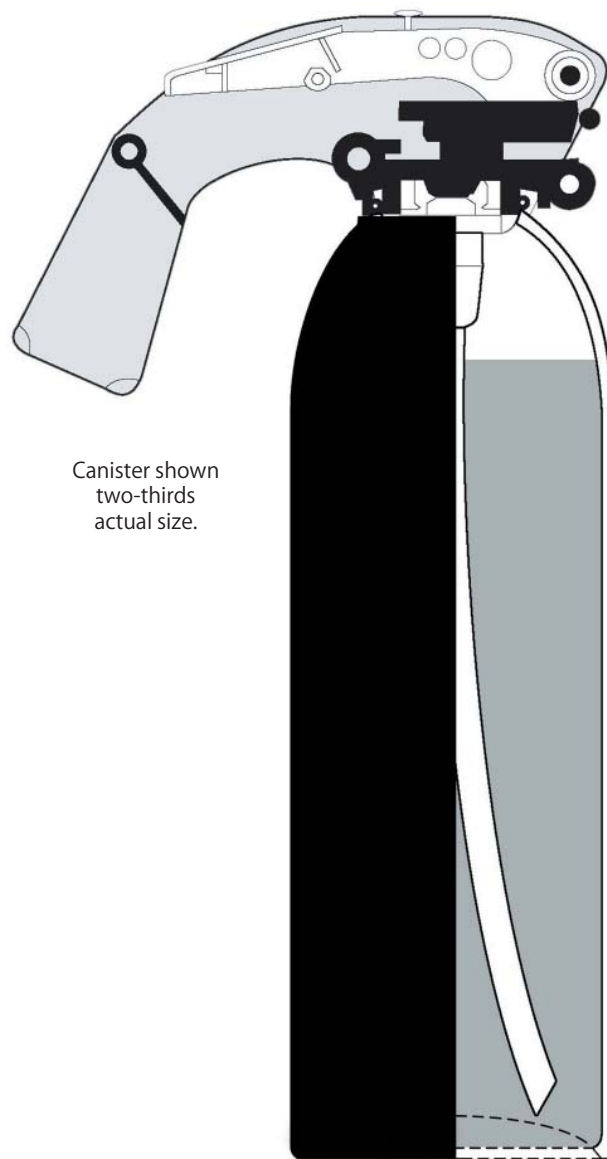
LEVEL II

Active Ingredient:	5% capsaicin
Scoville Heat Units:	2,000,000
Scoville Value:	100,000
Total Capsaicinoids:	0.62%
Delivery System / Part ID:	Tactical Stream™ / 53951
	Stream / n/a
	Cone / n/a
	Pro-Foam™ / 53954
	High-capacity Fog / 53955

LEVEL I

Active Ingredient:	10% capsaicin
Scoville Heat Units:	500,000
Scoville Value:	50,000
Total Capsaicinoids:	0.31%
Delivery System / Part ID:	Tactical Stream™/52951
	Stream / n/a
	Cone / n/a
	Pro-Foam™ / 52954
	High-capacity Fog / 52955

Labeled in accordance with AOAC 995.03 and ASTA 21.3
in their most current editions.



SPECIFICATIONS

Subject to change without notice.

Height: 9.15" / 23.24 cm

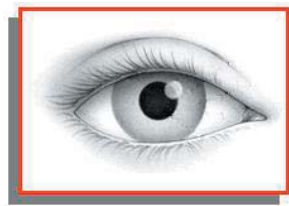
Diameter: 2.60" / 6.60 cm

Fluid Ounces: 16.01 oz / 473.47 ml

Firing Mechanism: Pistol-grip
with pull-ring safety

Warranty: Five (5) years from
date of manufacture

Canister Material: Seamless
Aluminum Rated 18-bar



NOTE: The following post-exposure cleansing guidelines are recommendations only and are not intended to preclude comprehensive training from an established industry source. Consult your agency's Standard Operating Procedures and/or General Orders.

Remove subject from the contaminated area. Keep subject calm and restrict activity. Check to make sure subject is breathing properly. Most subjects will begin to feel relief within 20–30 minutes. If after 45 minutes the subject does not feel relief, call EMS or a physician.

PROCEDURES

EYES:

1. **DO NOT** allow subject to rub the eyes.
2. **DO NOT** apply commercial eyewash. Wash eyes out with generous amounts of cool water.
3. Determine if subject is wearing contact lens. If so, allow subject to remove them or call EMS to remove. **DO NOT** remove lenses yourself. Hard contact lenses should be cleaned thoroughly; soft contact lenses should be discarded.
4. Keep eyes open and turn face in the direction of moving air (i.e. wind or fan).

NOSE:

1. Blow nose to remove discharge and particles of the active ingredient.
2. Repeatedly advise to relax and breathe normally.

SKIN:

1. **DO NOT** apply creams, salves, oils, lotions, or burn cream. These products will confine the active ingredient inside the skin causing increased pain and prolonged effects.
2. Ice may be applied to burning areas.
3. If possible, allow subject to shower with cool water using mild soap. Be sure to direct subject to thoroughly shampoo hair.
4. Paper towels may be used to remove resin particles from the skin and speed up the cleansing process. Pat (**do not rub**) paper towels on the exposed area of the skin and discard after just one use.
5. Repeatedly flush skin with generous amounts of cool water and turn face in the direction of moving air (i.e. wind or fan).

CHEST:

1. Talk reassuringly to subject to help relieve discomfort and avert panic. Verbally reassure subject that the effects of the active ingredient are temporary. Repeatedly advise to relax and breathe normally.

REQUIREMENTS

This program is physically exerting and requires students to be in reasonably good physical condition. Attendees will be required to complete and submit a Medical Release Form (MRF-06) prior to class participation.

TWO-DAY CURRICULUM

- Defense Spray Facts
- Defense Spray Formulations
- Proper Defense Spray Labeling
- Canisters, Firing Mechanisms, & Delivery Systems
- Tactical Use of Defense Sprays
- Hazards & Limitations of Defense Spray
- Policies, Procedures & Reporting of Defense Sprays
- Drawing, Stance & Deployment of Defense Sprays
- Exposure and Post-exposure Cleansing Techniques
- Instructional Techniques for Use-of-Force-Type Training
- Effective Instructor Communication Techniques
- Effective Student & Class Management Techniques
- Skills and Traits of an Effective Use-of-Force Instructor

CERTIFICATION

DS-ICP™ certification is valid for 60 calendar months (five years) and permits the certified instructor to administer the CQB Defense Spray Operator Course within his or her agency.

E-CERT®

DS-ICP™ certificate holders receive exclusive access to E-CERT®, the online training portal designed to provide correspondence and self-paced re-certification, free for life. This training portal is available only to DS-ICP certificate holders and provides access to training-related resources such as:

- No-charge, online instructor re-certification
- Training aids and support materials
- Instructor PowerPoint programs
- Model policies and forms
- CQB Net™

Defense Spray Instructor Certification Program™ (DS-ICP)™ will significantly enhance the skill level of both law enforcement and corrections-oriented instructors. This factory-authorized, 16-hour, non-brand specific, Instructor Certification Program is for experienced training officers who are assigned the responsibility to properly evaluate different aerosol formulations, select a product, develop policy, and instruct their agencies' officers in the appropriate use of aerosol defense spray.

Defense spray training has to keep up with the times. This course includes "active simulation" training that focuses on the realities of control before, during, and after aerosol deployment, and transitions to other force options consistent with popular use of force continuum models, as well as the contemporary "Ontario Wheel" model.

View our training schedule and register to attend at WWW.CQBSUPPLY.COM.



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