



WITH AIE™ TECHNOLOGY

USE OF CHEMICAL FORCE IN AMERICA

The International Association of Chiefs of Police (IACP) National Police Use of Force Database is the first substantial aggregation of state, county, and local law enforcement use of force data. While the project began in 1995, participating agencies have contributed data from earlier years as far back as 1991.

Data from 1995-2000 shows that the historical street continuum for officers was physical force. At that time, the ratio between the frequencies of physical force to chemical force was about 13 to 1. Between 1999-2000, the ratio of physical to chemical force was 2 to 1. Thus officer use of chemical force has increased considerably in recent years.

From 1999-2000, physical force remains the most common force used by officers, followed by chemical force. However, the use of chemical force was greater than the combined totals for electronic, impact, and firearm force.

What follows are some recent and noteworthy findings from the data collected that specifically relates to the use of Aerosol Subject Restraints (ASRs) and related policy matters.



Departments Permit the use of Chemical Force

Calendar Year	%Yes	%No
1996	81.5	18.5
1997	90.4	9.6
1998	97.0	3.0

Departments Have Policy on Use of Force Continuum

Calendar Year	%Yes	%No
1996	96.3	3.7
1997	100	0.0
1998	97.0	3.0

Departments Have Formal Use of Force Continuum

Calendar Year	%Yes	%No
1996	88.9	11.1
1997	98.1	1.9
1998	97.0	3.0

NOTE: Data obtained from National Use of Force Database final report published March 2001.

“PURE CAPSAICIN IS 16 MILLION SCOVILLE HEAT UNITS”

The analysis for the heat bearing components of red peppers has been with us since the early 1900's. The analytical methodology for heat determination has been one of constant evolution with a great deal of activity in the past ten years. American Spice Trade Association (ASTA) Method 21.0, the old Scoville Heat Test used by industry for many years, had a large variability due to:

- Lack of reference standards
- Lack of statistical validity
- Poor test reproducibility
- Ethanol bite in sample
- Increase taste threshold
- Rapid taste fatigue
- Build up of heat

Moreover, ASTA Test Method 21.1 was developed by a single laboratory and required the use of some chemicals that are no longer deemed safe by the Federal Government. Therefore, in December 1998, ASTA determined that methods 21.0 and 21.1, as methods to determine capsicum, were made obsolete.

ASTA Method 21.3, Pungency Of Capsicums And Their Oleoresins (HPLC Method) was adopted December 1998 and remains as the only official method recognized for the analysis of capsicum heat. It is a collaborative method developed by the ASTA in conjunction with the American Organization of Analytical Chemists (AOAC). The ASTA Executive Committee of the Technical Group has determined that methods 21.0 and 21.1 are no longer valid tests, and that Method 21.3 is to be the only official method used for the analysis of capsicum heat.

Merle I. Eiss
Technical Director, ASTA

Due to the prospect of causing permanent harm to skin and/or nerve endings, it is generally accepted by law enforcement and corrections training professionals that the use of ASRs with a Scoville Value exceeding 200,000 would be unsuitable for normal duty use. Use the chart below to find out where the pungency of your current brand rates with the pungency of alternate brands.

Remember, the Scoville Value and percentage of major capsaicinoids are the true determinants of the pungency/effectiveness of an ASR, and not just the OC percentage or Scoville Heat Units.

OC Pungency Chart (Pure capsaicin included for comparison purposes only).

Active Ingredient	Canister Weight Concentration	* Scoville Heat Units	Scoville Value	** Major Capsaicinoids
Pure Capsaicin	10%	*16,000,000	1,600,000	10%
American Defense (Red)	10%	2,000,000	200,000	1.25%
BG-X (Reliapon)	10%	2,000,000	200,000	1.25%
BodyGuard (LE-10)	10%	2,000,000	200,000	1.25%
Premium Less-Lethal	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%
Fox Labs	2%	5,300,000	106,000	0.66%
American Defense (White)	5%	2,000,000	100,000	0.62%
BG-V (Reliapon)	5%	2,000,000	100,000	0.62%
BodyGuard Plus (Reliapon)	5%	2,000,000	100,000	0.62%
Punch II & III	5%	2,000,000	100,000	0.62%
STROAM (Reliapon)	5%	2,000,000	100,000	0.62%
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 (Blue)	10%	500,000	50,000	0.31%
Sabre Defense	10%	500,000	50,000	0.31%
Def-Tec (First Defense)	10%	320,000	32,000	0.20%
Federal Labs (Pepper 10)	10%	320,000	32,000	0.20%

NOTE: Comparative data obtained from manufacturers marketing materials and believed to be true at the time of printing.

* In accordance with ASTA 21.3, Pungency Of Capsicums And Their Oleoresins (HPLC Method).
 ** Tolerances are ± .02.

AIE™ TECHNOLOGY

American Defense™ brand ASRs are enhanced with AIE™ (*Accelerated Inflammatory Effect*) Technology. This innovative, and groundbreaking new technology delivers the single most significant improvement in ASR performance in 25 years!

This entirely new category of ASR features a 100% natural active ingredient that facilitates the accelerated irritation, soreness, and the involuntary inflammation of the eye capillaries, oral, and nasal mucus membranes, causing American Defense™ to take its desired effect over 50% faster when compared to competitive brands with the same pungency.

When charged with the responsibility of developing a new “high performance” homeland defense ASR, Reliapon engineers conducted an examination of ASR components currently available for the purpose of identifying and developing new ASR technologies.

The requestor established that the new ASR fit into the carrier of the US Military Law Enforcement Ensemble (LEE) and, meet the following performance characteristics:

- Be non-flammable
- Contain no known carcinogens or hazardous ingredients.
- Contain no isopropyl alcohol that may cause corneal burns.
- Cause an accelerated inflammatory effect of mucous membranes without jeopardizing physical safety.
- Incorporate an FDA recognized propellant that facilitates constant internal canister pressure.
- Be fully operable in climatic temperature ranges of 10°F–120°F.
- Resist salt fog corrosion and operate after salt fog exposure.
- Fire in the inverted position.

As a result of a strong commitment to experimentation, technology, research into law enforcement functions, and more importantly, our significant concern for officers, the public, and environmental safety, AIE™ Technology was born by incorporating a unique mixture of ingredients, modern mixing processes, maximized actuator and delivery systems, with superior Quality Assurance Procedures (QAP), AIE™ Technology delivers immediate results, no matter what your preference of three (3) pungency levels.

ASRs are considered a “low level” control and restraint technique. The purpose of deployment is to provide compliance to verbal commands when dealing with unarmed, hostile subjects. AIE™ Technology just makes it happen faster.

MK-3 FORMULA OPTIONS

RED Formula (Part # 3ADR-F1)
 Active Ingredient10% OC
 Scoville Heat Units.....*2,000,000
 Scoville Value.....200,000
 Major Capsaicinoids1.25%

WHITE Formula (Part # 3ADW-F1)
 Active Ingredient5% OC
 Scoville Heat Units.....*2,000,000
 Scoville Value100,000
 Major Capsaicinoids0.62%

BLUE Formula (Part # 3ADB-F1)
 Active Ingredient10% OC
 Scoville Heat Units.....*500,000
 Scoville Value.....50,000
 Major Capsaicinoids0.31%

**In accordance with ASTA test method 21.3.
 Pungency of Capsicums and their Oleoresins (HPLC Method)*

PHYSICAL & OPERATIONAL

Subject to change without notice.

Formulation Weight 2.47 oz. / 70.02 g

Dimensions
 Height: 4.35" / 11.04cm
 Diameter: 1.50" / 3.81cm

Firing Mechanism Spring-loaded "flip-top".

Delivery System
 Delivery Means: Stream
 Primary Effect: Vision
 Operational Strength: Target Specific, Minimal Cross-Contamination, Requires No Special Equipment, Fits Standard Issue LEE or Duty Gear.

Range
 Optimal Range: 10-12 Feet
 Maximum Range: 12-15 Feet

Primary Users Military, Law Enforcement, Corrections, & Security Personnel.

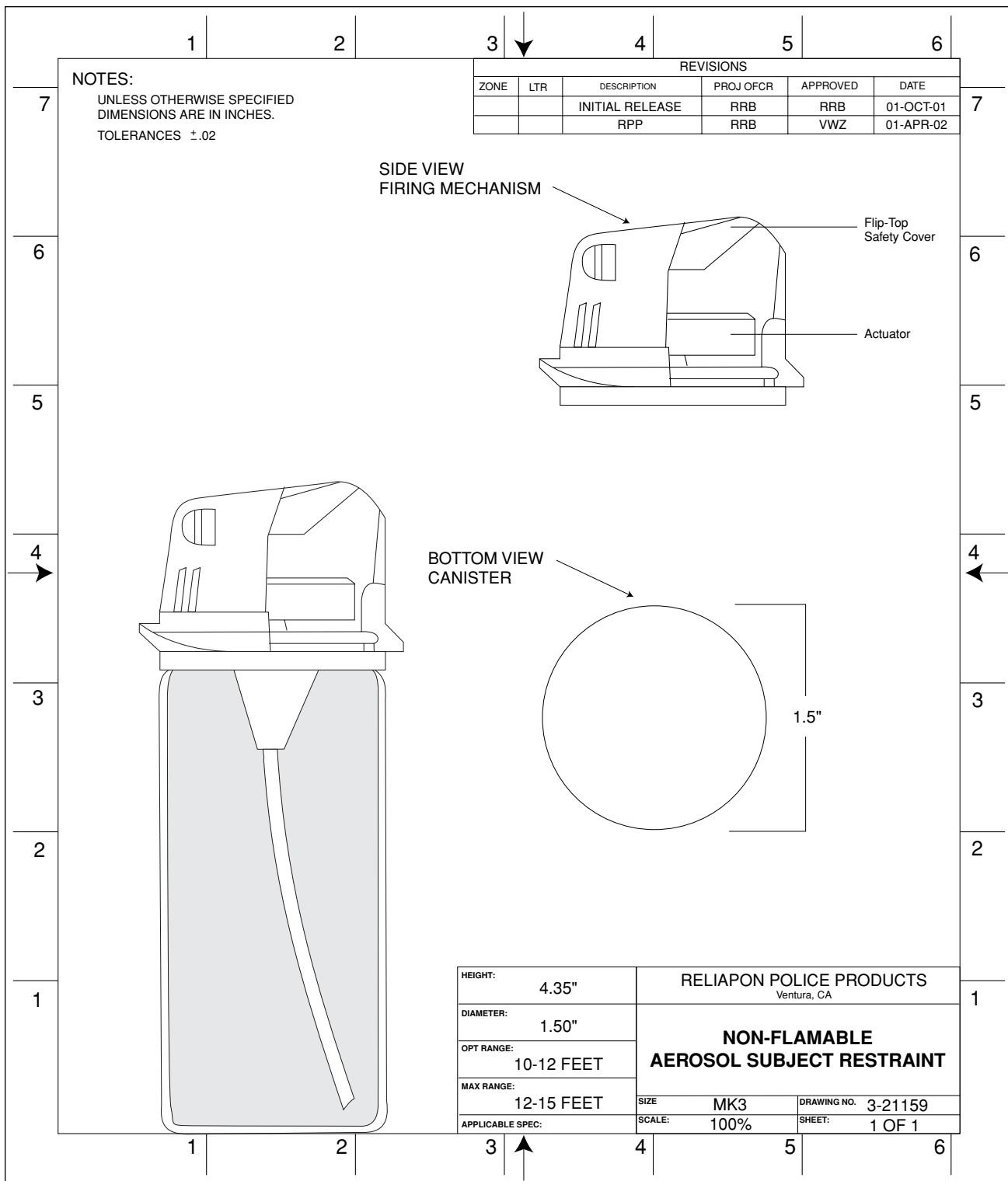
Potential Target Fleeing Suspects, Non Compliant Subjects, Prison / Civil Disturbance.

Warranty 5 Years From Date of Manufacture.

Risk Assessment Low, Contains No Carcinogens.

Shipping Name Aerosol, Non-Flammable, ORM-D

WWW.RELIAPON.COM PH: 888-263-4482



MINIMIZE YOUR AEROSOL RISK

Physical altercations between law enforcement officers and individuals resisting arrest have historically been a source of injury to both officers and subjects. Law enforcement officers adequately trained in the use of force are authorized to use force in specified circumstances, and frequently are faced with numerous occasions when use of force is not only appropriate, but also necessary.

Concerns for increased civil liability, as well as the court-imposed limitations on the use of deadly force require agencies to continuously explore safer, yet more effective less-than-lethal force alternatives. One such alternative is Aerosol Subject Restraints (ASRs).

Agency use of ASRs has increased dramatically in recent years as ASRs have proven to greatly assist law enforcement officers in resolving difficult situations. When correctly deployed, ASRs are a viable method for controlling resistive behavior without increasing the likelihood of death or serious injury.

As with any weapon system, officers should be trained, and retrained. In the interest of officer safety, and to reduce the threat of litigation, initial training should be as realistic as possible while following the manufacturers recommendations. Policies should be adopted that call for objective and reasonable use of all control options, including ASRs. Policies should also require appropriate post exposure monitoring and aftercare.

Note: While adherence to the recommendations listed at right may reduce the likelihood of a successful claim against your agency, it will not eliminate all exposure to such claims. To that end, always consult with your attorney for specific legal advice.

Minimize Your Aerosol Risk By:

- Choose a NON-FLAMMABLE formulation that contains NO CARCINOGENS and NO ISOPROPYL ALCOHOL. Acquire Material Safety Data Sheets (MSDS) in accordance with the American National Standards Institute (ANSI) format prior to purchase. If you receive an MSDS with blank spaces that are not completed, be certain to request one that is appropriately completed.
- Adopt a procedure governing the use of ASRs that is not brand specific and addresses the proper use of all OC products. Make certain to incorporate language with regard to training considerations and reporting requirements following use of ASRs.
- Avoid the placement of ASRs onto specific levels in your agencies force/control continuum.
- Require training and certification of all officers BEFORE authorization to carry or use ASRs. Training must include use, decontamination, maintenance, and storage of ASRs.
- Utilize training programs that meet your state POST Councils guidelines for use of force programs, and that are post approved.
- Accomplish the most realistic training possible. While some agencies allow officers to carry ASRs without being exposed, the vast majority of training officers recommend a dynamic, full spray hit; which is a 1–2 second burst sprayed directly into the face.
- Develop appropriate safety and medical controls for your training program.
- Require a bare minimum of annual retraining with all issued/approved weapons/control options. More recurrent training is suggested.
- Require meticulous post use-of-force monitoring of subjects, particularly when ASRs are used.
- Require that an ASR Usage Report and/or Use Of Force Report be completed after every usage.

APPROPRIATE TREATMENT MEASURES AND AFTERCARE

The following decontamination recommendations are not intended to preclude comprehensive training from an established industry source. Consult your agency SOP or General Orders.

Remove the subject from the contaminated area. Keep calm, restrict activity, and check to make sure subject is breathing correctly. Most subjects will begin to feel relief within 20-30 minutes. If after 45 minutes the subject does not feel relief, call EMS / Physician.

Eyes

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

Nose

1. Breathe normally
2. Blow nose to remove discharge and OC particles.

Skin

1. DO NOT apply creams, salves, oils, lotions, or burn cream. These will confine resin particles inside the skin causing increased pain.
2. Ice may be applied to burning areas.
3. Shower with cool water using mild soap and shampoo hair.
4. Paper towels may be used to remove resin from the skin and speed up the decontamination period. Discard after just 1 use.
5. Flush the skin with generous amounts of cool water and face in the direction of moving wind

Chest

1. Verbally reassure subject that the effects they are feeling are temporary. Talk reassuringly to subject to help relieve discomfort and avert panic. Advise to relax and breathe normally.

MK-9 FORMULA OPTIONS

RED Formula (Part # 9ADR-P4)
 Active Ingredient10% OC
 Scoville Heat Units.....*2,000,000
 Scoville Value.....200,000
 Major Capsaicinoids1.25%

WHITE Formula (Part # 9ADW-P4)
 Active Ingredient5% OC
 Scoville Heat Units.....*2,000,000
 Scoville Value100,000
 Major Capsaicinoids0.62%

BLUE Formula (Part # 9ADB-P4)
 Active Ingredient10% OC
 Scoville Heat Units.....*500,000
 Scoville Value.....50,000
 Major Capsaicinoids0.31%

**In accordance with ASTA test method 21.3,
 Pungency of Capsicums and their Oleoresins (HPLC Method)*

PHYSICAL & OPERATIONAL

Subject to change without notice.

Formulation Weight 11.64 oz. / 330.00 g

Dimensions
 Height: 9.15" / 23.24cm
 Diameter: 2.60" / 6.60cm

Firing Mechanism "Pistol-grip" w/ Pull-Ring Safety.

Delivery System
 Delivery Means: High Capacity Fogger
 Primary Effect: Vision / Respiratory System
 Operational Strength: Ideal For Crowd Management.
 Designed To Distribute a Large Quantity of Formulation Over a Widespread Area.

Range
 Optimal Range: 15 - 18 Feet
 Maximum Range: 20 - 25 Feet

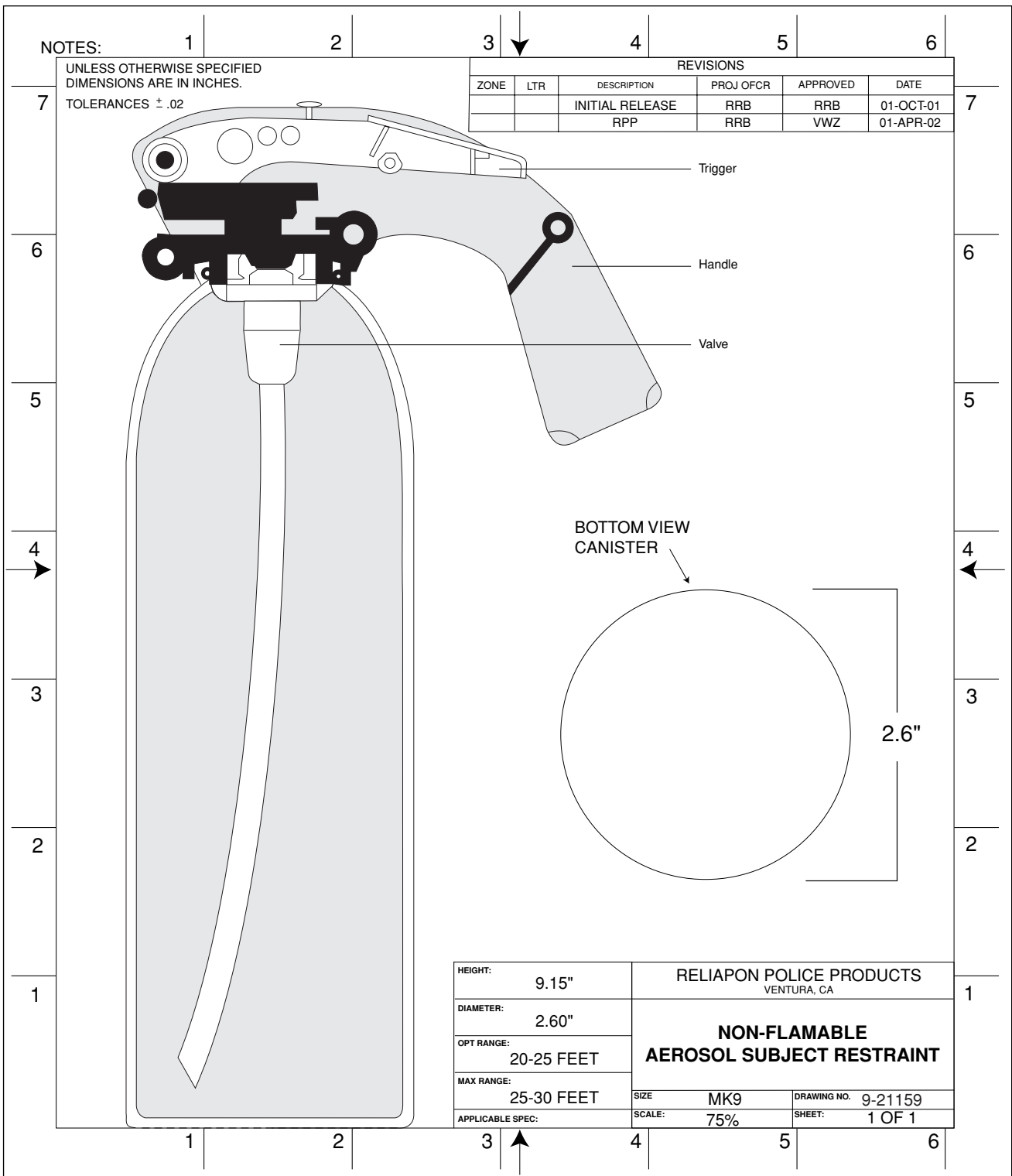
Primary Users Military, Law Enforcement, Corrections, & Security Personnel.

Potential Target Crowd Management, Non Compliant Groups, Prison / Civil Disturbance.

Warranty 5 Years From Date of Manufacture.

Risk Assessment Low, Contains No Carcinogens.

Shipping Name Aerosol, Non-Flammable, ORM-D



BEWARE OF CARCINOGEN'S IN ASRs!

Although exposures to a number of well-recognized occupational carcinogens have been reduced or eliminated in recent years, many law enforcement professionals continue to be unnecessarily exposed to known or suspected cancer-causing agents through the use of Methylene Chloride in Aerosol Subject Restraints (ASRs).

The National Institute of Occupational Safety & Health (NIOSH) has identified Methylene Chloride (synonyms – Dichloromethane, Methylene Dichloride), as a potential occupational carcinogen (Table III-1, Group 2B). On December 29, 1970, the U.S. Congress passed the Occupational Safety & Health Act in order to assure safe and healthful working conditions for employees by:

- Authorizing enforcement of the standards developed under the Act.
- Assisting and encouraging the states in their efforts to assure safe and healthful working conditions.
- Providing for research, information, education, and training in the field of occupational health.

Section 5 of the Act (Public Law 91-595, 91st Congress, S2193) entitled DUTIES, requires that employers shall:

- A)** Furnish to each employee a place employment, which is free from recognized hazards that are causing or are likely to cause death or serious injury.
- B)** Comply with Occupational Safety and Health Standards promulgated under the Act.

Facts About Methylene Chloride

- The World Health Organization (WHO) has determined that Methylene Chloride may cause cancer in humans.
- The Department of Health and Human Services (DHHS) has determined that Methylene Chloride can be reasonably anticipated to be a cancer-causing chemical.
- The EPA has determined that Methylene Chloride is a probable cancer-causing agent in humans.
- The most likely way to be exposed to Methylene Chloride is inhalation or contact with or absorption through the skin.

Your Obligations As An Employer

Agencies that choose to use an ASR, which contains known or suspected occupational carcinogens, are required to comply with the Hazard Communication Act. This Act requires that employers must communicate to employees that they are being exposed to chemicals that may cause cancer in humans. OSHA regulation 29 CFR 1910.1200 sets forth the guidelines and is intended to address comprehensively the issue of evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees. This is to be accomplished by means of comprehensive hazard communication programs, which include container labeling, material safety data sheets (MSDS), and employee training.

29 CFR 1910.1052 (Subpart Title: Toxic and Hazardous Substances) states that employees exposed to Methylene Chloride are at increased risk of developing cancer, adverse effects on the heart, liver, central nervous system, and skin or eye irritation. Exposure may occur through inhalation, or contact with or absorption through the skin. Under the requirements of 29 CFR 1910.1052(d), employers are required to monitor "employee exposure" which is defined as "Exposure to Methylene Chloride, which occurs or would occur if the employee were not using respiratory protection".

Employers who recognize that employees are/have been exposed to Methylene Chloride must make an "initial determination" of each employee's exposure level. If the employer determines that employees are exposed below the "Action Level" (29 CFR 1910.1052(b)) which by the way is lower than the Permissible Exposure Limit (PEL), the employer is required to:

- A)** Establish a record of each employee's past exposure to Methylene Chloride.
- B)** Establish a determination level for each employee's past exposure to Methylene Chloride. (Determination levels must be made in accordance with 29 CFR 1910.1052(d)(1)(i)(a) or 29 CFR 1910.1052(d)(1)(i)(b).)
- C)** Provide training to each "exposed" employee in accordance with 29 CFR 1910.1052(l).
- D)** Initiate provisions to shield other employees from contact with Methylene Chloride in accordance with 29 CFR 1910.1052(h).

OSHA'S EXPANDED HAZARD COMMUNICATION STANDARD

Awareness of the importance of safety has significantly increased over the past decade. This awareness has grown in response to activities by the government, the public, and the news media, including coverage of major chemical accidents. As a result of this increased awareness, the Occupational Safety and Health Administration (OSHA) has expanded its Hazard Communication Standard (CFR 1910.1200) to cover all employees who could potentially be exposed to hazardous chemicals in their work areas – regardless of the place of employment or the nature of the work. The Hazard Communication Standard requires that chemical manufacturers thoroughly evaluate the potential hazards of the chemical(s) they produce and communicate to your agency the hazards and the appropriate protective measures that should be maintained through the use of a Material Safety Data Sheet (MSDS).

Material Safety Data Sheets (MSDS)

Aerosol Subject Restraint (ASR) manufacturers are required to supply a Material Safety Data Sheet (MSDS). The role of MSDS's under CFR 1910.1200 is to provide information about the chemicals to which you will be exposed, including:

- Potential hazardous effects
- Physical and chemical characteristics
- Recommendations for appropriate protective measures.

The Environmental Protection Agency (EPA) requires approximately 120 tests that yield the toxicological, environmental, and physical property data that is used in the MSDS. Chemical manufacturers are required by the Hazard Communication Standard to provide an MSDS to the purchaser of the product at the time of delivery of the first order and, thereafter, anytime the MSDS is significantly revised. The MSDS may be included with the actual delivery, or it may be submitted electronically, or delivered by mail. As chemicals are further distributed satellite suppliers, distributors, and dealers, a copy of the MSDS must accompany their original delivery. Thus MSDS's are disseminat-

ed along the distribution chain until they eventually reach agencies whose officers will be applying the product.

MSDS Trade Secrets

ASR manufacturers are allowed to claim "trade-secrets" as a reason for not listing all of their ingredients on the MSDS. However, this claim is often made for the purpose of not disclosing the use of occupational carcinogens in their formula. While CFR 1920.1200 makes provisions for ASR manufacturers to withhold the specific identity, including the chemical name and other specific identification of a hazardous chemical, from the MSDS, the claim of "trade secrets" may only be made provided that:

- A) The claim that the information withheld is a "trade secret" can be supported.
- B) Both the properties of and the effects of the chemical name being withheld as trade secret, are present on the MSDS.
- C) The MSDS indicates that the specific chemical identity is being withheld as a trade secret.
- D) The specific chemical identity is made available to health professionals, employees, and designated representatives in accordance with CFR 1910.1200 (i) (1) (iv).

Procurement personnel must be diligent to acquire currently dated MSDS's prior to issuance of purchase orders. The MSDS must be in English and you are entitled to receive from your supplier a data sheet that includes 100% of the information required under CFR1910.1200. If you do not receive one automatically, you should request one. If you receive one that is obviously inadequate, with, for example, blank spaces that are not completed, you should request an appropriately completed one. If your request for a data sheet or for a corrected data sheet does not produce the information needed, you should contact your local OSHA Area Office for assistance in obtaining the MSDS.

Other ASR Products by Reliapon:

BODY GUARD
PLUS™

BG-V®

BG-X®

STROAM®
STREAMY FOAM

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