



FEDERAL BUREAU OF INVESTIGATION
INTELLIGENCE BULLETIN
Los Angeles Field Office

7 June 2012

(U) Counterfeit and Substandard Lithium (CR123A) Power Cell Batteries Pose Serious Health and Safety Risks to Law Enforcement Officers, Other Consumers

(U//FOUO) The FBI assesses with high confidence,^a based on multiple incident reports from a collaborative source with direct access to the information, that counterfeit and substandard lithium batteries pose a serious health and safety risk to consumers, specifically law enforcement officers, emergency medical services providers, and military personnel who use these batteries extensively. The FBI has received numerous reports of such batteries, which are not manufactured with the safety mechanisms of legitimate US branded-batteries, spontaneously combusting while being used, transported, or stored, resulting in serious injuries to consumers and damage to tactical equipment and property.

(U) Law Enforcement, Military, and Emergency Responders at Risk From Counterfeit or Substandard Lithium Batteries in Tactical Equipment

(U//FOUO) Lithium batteries, primarily CR123A cell batteries, are used by the public in electronic devices; however, they are more frequently used by law enforcement officers, emergency medical services providers, and military personnel in tactical equipment such as flashlights, weapon lights, headlamps, and helmet lights and cameras. Counterfeit and substandard lithium batteries have caused numerous incidents involving serious injury to law enforcement personnel, as well as damage to equipment and property.

- (U//FOUO) In March 2010, an on-duty police officer was seriously injured in Arizona and required emergency treatment when his flashlight exploded in his hand, causing the tail-cap and superheated CR123A batteries to impact his face. Further investigation determined that a Chinese-manufactured CR123A battery cell caused the explosion (See Figure 1.).¹
- (U//FOUO) In October 2009, a CR123A lithium battery in the weapon light of a Deputy US Marshal's gun overheated and vented, causing extensive damage to the gun and weapon-light assembly. The incident was caused by the mixing of a legitimate US brand lithium battery and a lithium battery that was not manufactured in the United States. To compound the problem, fresh cells were most likely mixed with depleted cells.²

^a (U) See Appendix A for confidence-level definitions.

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(U) Fig. 1. March 2010 incident involving an on-duty police officer. The injuries and damages were the result of a flashlight containing Chinese-manufactured lithium CR123A batteries, which exploded in the officer's hand.

(U) FBI; Case Information; 31 March 2010; 11 January 2012; "(U) Incident Report, Salt River Police Department, 31 March 2010"; UNCLASSIFIED; UNCLASSIFIED; from a collaborative source with excellent access.

- (U//FOUO) In November 2011, a flashlight located in a tactical bag exploded in a SWAT vehicle in Tennessee, resulting in damage to the equipment in the bag and to the vehicle. Investigation determined that the explosion resulted from the unauthorized use of battery cells manufactured in China as well as the mixture of depleted cells with new cells in a manner not recommended by reputable manufacturers.³
- (U//FOUO) In October 2011, a police officer in Kentucky reported an incident involving an explosion of his weapon light at a Combat Shooting and Training Facility. The cause of the incident was determined to be from overheating of the battery safety circuit, internal shorting, and venting brought about by mixing an unauthorized brand and type known only as "orange" and by mixing fresh cells with depleted cells.⁴

(U) Common Failings Associated with Counterfeit and Substandard Lithium Batteries

(U//FOUO) The Federal Aviation Administration (FAA), US Postal Service Lithium and Lithium Ion Regulations, US Postal Service Compliance Center, International Trade Administration, and the National Electrical Manufacturers Association (NEMA) have all warned of the health and safety risk to consumers of counterfeit and substandard lithium batteries. The following are common failings associated with these items according to the US Postal Service.⁵ Incidents of failure can result in personal injury and property damage.

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- (U) Non-compliance: Includes faulty design, false certification of regulatory and testing requirements and data, false claims and advertising, liquidation and obsolete inventory sellers (foreign and domestic), counterfeit manufacturers and their distributors.
- (U) Internal Shorting: Faulty, inconsistent, and unregulated manufacturing processes, foreign contamination occurring during the manufacturing process, and physical damage which can be caused by untrained or non-proficient manufacturing personnel, counterfeit materials, subcontracted personnel, or uncertified manufacturer(s) and their processes.
- (U) External Shorting: Occurs when an exposed terminal is contacted by a metal object. This can cause the cell to heat up if a return circuit is formed. This is mostly related to insufficient internal and external packaging of battery cells by the seller(s).
- (U) Improper Usage: Not understanding the proper electrical value and functioning required for your equipment or ignorance or purposeful misrepresentation of equivalency by the seller(s). This can include mixing batteries with different depletion levels, mixing types and brands of batteries, or using batteries that are not compatible with equipment of device.

(U//FOUO) The failings mentioned above result in defects that can put users' health and safety at risk.

- (U//FOUO) When the identified US brandholder tested their legitimate lithium CR123A batteries against several counterfeit lithium batteries made in China, the power testing revealed a lack of consistency in power distribution in the counterfeit batteries, whereas the authentic US brandholder's batteries had consistent power distribution with no dropouts or spikes. Inconsistent power distribution caused the counterfeit batteries to explode.⁶
- (U) Counterfeit and substandard batteries have been found to contain prohibited substances such as mercury, which is considered hazardous, in violation of both federal and state laws.⁷

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(U) Origin of Counterfeit and Substandard Lithium Batteries

(U) According to law enforcement investigations, numerous open source reports and interviews with industry experts, counterfeit and substandard batteries are often manufactured and imported to the United States from China and other countries. Many Chinese manufacturers produce counterfeit and substandard batteries to profit on illegal or substandard products and do not have the manufacturing knowledge, experience, or requirements in place for process controls, quality, safety, or shipping. While there are some reputable Chinese manufacturers and distributors, US brand holders as well as the US Department of Commerce International Trade Administration (ITA) indicate that China is the primary source of counterfeit product investigations and incidents.

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(U) How to Avoid Purchasing or Using Counterfeit and Substandard Lithium Batteries

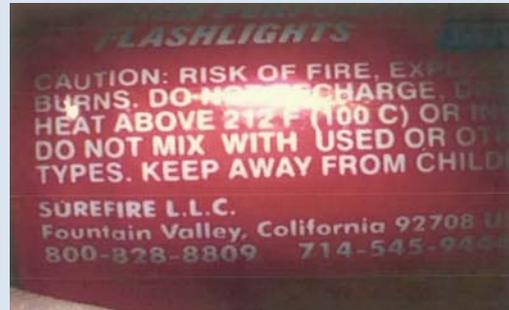
(U//FOUO) Several indicators are associated with counterfeit or substandard lithium batteries; awareness of these indicators can decrease the chances of purchasing inferior batteries that can put users at risk.

- (U) Common exterior indicators of counterfeit batteries include label misspellings, missing label information, blurred fonts, altered logos or seals, different label dimensions, altered or substandard packaging, crimp seal differences, material differences, and differences in the vent perforation of the anode.^b
- (U) Counterfeit and substandard lithium batteries are often sold at a reduced price on the Internet and at swap meets, store fronts, gun shows, and electronics and technical shows. Although not all batteries sold at these locations are counterfeit or substandard, such sellers are often sources of counterfeit or substandard batteries produced in China and the chance of purchasing a counterfeit or substandard battery is higher at these locations.

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(U) Authentic US Brand Lithium Cell



(U) Counterfeit Lithium Cell Made in China

(U) Fig. 2. Comparison of an authentic US brand lithium cell battery (left) to a counterfeit lithium cell made in China (right), showing a misspelling of California (“Colifornia”), a missing date stamp, and a wrapper joint or seam that is 180 degrees out of position.

(U) FBI; Case Information; 11 January 2012; “(U) Battery Safety Information for CR123A Primary Power Cells”; UNCLASSIFIED; UNCLASSIFIED; from a collaborative source with excellent access.

(U) Outlook and Implications

(U//FOUO) The FBI assesses that counterfeit and substandard lithium batteries will continue to pose a health and safety risk to law enforcement officers, military personnel, and emergency medical services personnel, as well as unwitting consumers in the general public, as long as they are available for purchase. Taking the following precautions, however, can reduce the likelihood

^b (U) An anode is an electrode through which electric current flows into electrical device.

of user injury or property damage from either the purchase of counterfeit and substandard batteries or the improper use of legitimate lithium batteries.

- (U) Law enforcement, military and emergency personnel should use caution when purchasing batteries from online auction sites, online vendors, store fronts, gun shows, electronic and technical shows and swap meets. Individuals purchasing batteries on the secondary market should seek quality assurance and scrutinize labels, packaging and contents; seek authorized retailers; watch for missing sales tax charges; and insist on secure transactions, according to the International Trade Commission.⁸
- (U) To prevent a catastrophic event when using legitimate lithium batteries, individuals should refrain from improperly mixing different types and brands of batteries; using a combination of batteries with different depletion levels (that is, mixing old and new batteries); and removing lithium batteries from one product and placing them into another product in which they are not intended to be used (such as removing a lithium battery from a flashlight and placing it in a camera).

(U//FOUO) The FBI assesses that in addition to the safety risks, the sale of counterfeit and substandard lithium batteries has a negative economic impact on both users and US manufacturers of legitimate lithium batteries. The widespread use of tactical equipment and electronic devices requiring lithium batteries among law enforcement, emergency medical services providers, and military personnel can lead to significant costs for these agencies if they purchase and then must replace defective batteries, tactical gear and property, or pay for emergency care. US manufacturers lose potential revenue when producers in China and other countries profit from the fraudulent use of US brand holders' trademarks. In addition, when incidents occur involving what appear to be legitimate US batteries, the brand holder often faces costs in terms of both money spent on testing to determine the cause of the incident and potential erosion in brand confidence among consumers.

(U) Intelligence Collection Requirements Addressed in Paper

(U//FOUO) This intelligence bulletin satisfies intelligence requirements contained in the FBI Standing Intelligence Requirements Sets USA-IPR-CYD-SR-0033-11.I.C.4; USA-IPR-CYD-SR-0033-11.II.A.1; USA-IPR-CYD-SR-0033-11.II.A.2; USA-IPR-CYD-SR-0033-11.II.A.4 and the National HUMINT Collection Directives TOC2008A.I.G.1.1; TOC2008A.I.G.1.2; TOC2008A.G.1.3; and TOC2008A.I.G.1.4

(U) This product has been prepared by the Los Angeles Division of the FBI. Comments and queries may be addressed to the Los Angeles Field Intelligence Group at 310-477-6565.

(U) Appendix A: Confidence-Level Definitions

(U) FBI assessments are supported by information that varies in scope, quality, and sourcing. Consequently, the FBI ascribes high, medium or low confidences to judgments, as follows:

(U) **High Confidence** generally indicates that judgments are based on high-quality information from multiple sources or from a single highly reliable source, and/or that the nature of the issue makes it possible to render a solid judgment.

(U) **Medium Confidence** generally means that the information is credibly sourced and plausible, but can be interpreted in various ways, or is not of sufficient quality or corroborated sufficiently to warrant a higher level of confidence.

(U) **Low Confidence** generally means that the information's credibility and/or plausibility is questionable, the information is too fragmented or poorly corroborated to make solid analytic inferences, or that the FBI has significant concerns or problems with the sources.

(U) Endnotes

¹ (U) FBI; Case Information; 31 March 2010; 11 January 2012; “(U) Incident Report, Salt River Police Department, 31 March 2010”; UNCLASSIFIED; UNCLASSIFIED; from a collaborative source with excellent access.

² (U) FBI; Case Information; 19 October 2009; 11 January 2012; “(U) Incident Report, Model Insight M6X-000, US Deputy Marshall, 19 October 2009”; UNCLASSIFIED; UNCLASSIFIED; from a collaborative source with excellent access.

³ (U) FBI; Case Information; 7 December 2011; 11 January 2012; “(U) Incident Report, Nashville Metro Police Department, 7 December 2011”; UNCLASSIFIED; UNCLASSIFIED; from a collaborative source with excellent access.

⁴ (U) FBI; Case Information; 28 October 2011; 11 January 2012; “(U) Incident Report, Bowling Green Police Department, 28 October 2011;” UNCLASSIFIED; UNCLASSIFIED; from a collaborative source with excellent access.

⁵ (U) Domestic Mail Manual; US Postal Service; *US Postal Service Lithium and Lithium Ion Regulations*; 5 October 2007; Source is US Postal Service Regulations.

⁶ (U) FBI; Case Information; 11 January 2012; “(U) Battery Safety Information for CR123A Primary Power Cells”; UNCLASSIFIED; UNCLASSIFIED; from a collaborative source with excellent access.

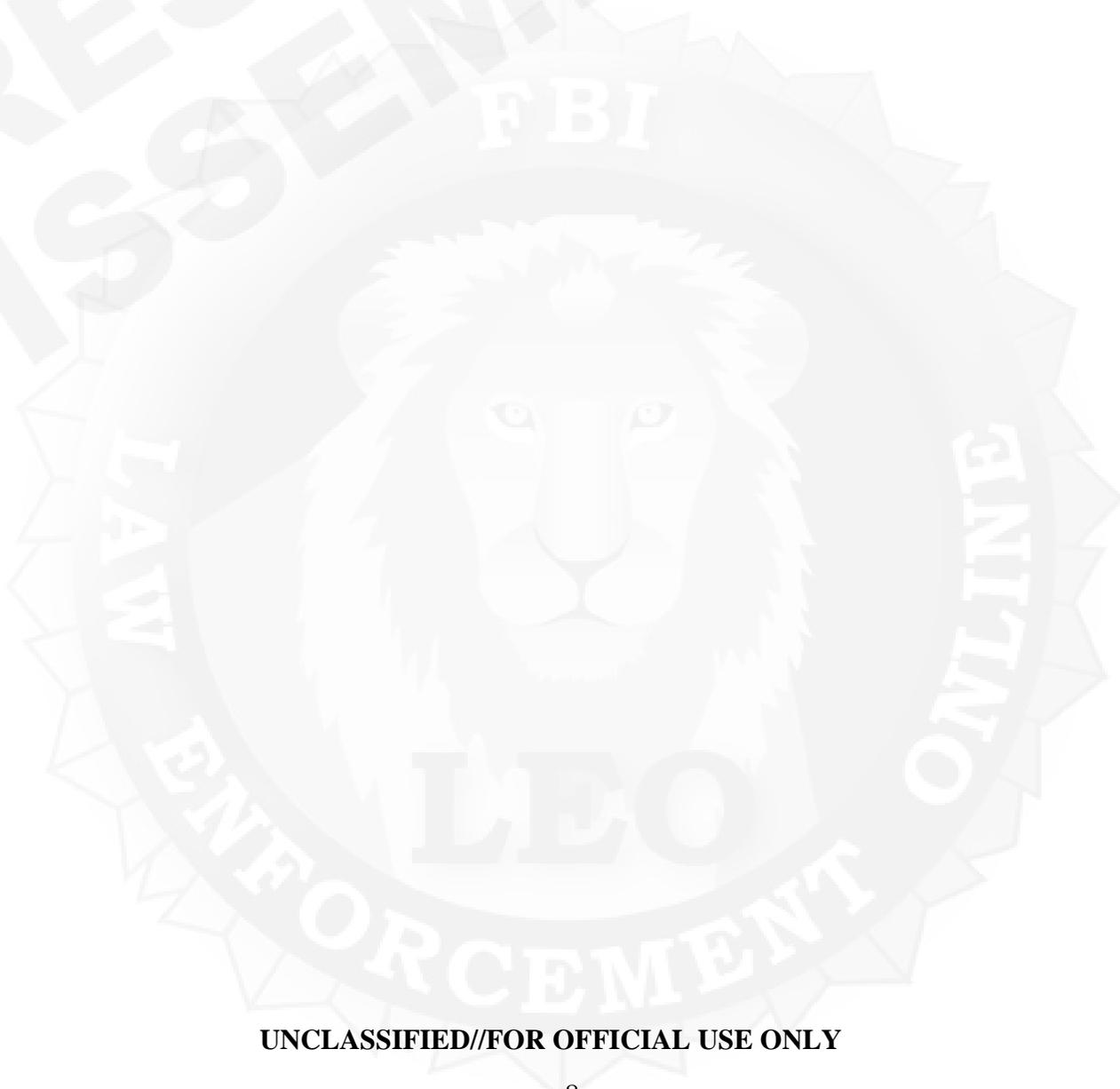
⁷ (U) Surefire LLC; Safety Document/Brochure; 17 November 2011; “(U) Lithium CR123A Cells and the Internet Market. Why the Internet Markets are Simply Dangerous”; UNCLASSIFIED; UNCLASSIFIED; from a US battery manufacturer/brandholder.

⁸ (U) Internet site; International Trade Commission; “Top 10 Ways to Protect Yourself From Counterfeiting and Piracy”; http://www.trade.gov/press/press_releases/2007/top10-stopfakes_041007.pdf; accessed 8 February 2012; US Department of Commerce.

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FBI Customer Satisfaction Survey

Product Title: (U) Counterfeit and Substandard Lithium (CR123A) Power Cell Batteries Pose Serious H

Posted Date: 06/07/2012

Customer Agency: Select . . .

Other:

Customer Role: Select . . .

Customer Responsibilities

Customer's Program: Select . . .

Customer's Region: Select . . .

Relevance to your intelligence needs - Check one

	Strongly Agree	Somewhat Agree	N/A	Somewhat Disagree	Strongly Disagree
This Product increased my knowledge of an issue or topic?	<input type="radio"/>				
The product helped me decide on a course of action?	<input type="radio"/>				
This product was timely to my intelligence needs?	<input type="radio"/>				

How did you use this product in support of your mission?

Integrated into one of my own organization's finished products or intelligence reports

Shared contents with federal partners?

If so, who?

Shared contents with foreign partners?

If so, who?

Shared contents with state, local and tribal partners?

If so, who?

Shared contents with private sector partners?

If so, who?

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