UL 8139

Outline of Investigation for Electrical Systems of Electronic Cigarettes

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Summary of Topics

This first issue of the Outline of Investigation for Electrical Systems of Electronic Cigarettes, UL 8139, covers the electrical systems of personal battery operated Electronic Cigarettes, also known as e-Cigarettes, and their battery charging systems.

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INTRODUCTION

1 Scope

1.1 These requirements only cover the electrical systems of personal battery operated electronic cigarettes, also known as e-Cigarettes, and their battery charging systems.

1.2 These requirements do not cover the consumable of the electronic cigarette, such as e-Liquids and other inhaled vapor substances, wicks, and other particulate matter inhaled during use.

1.3 These requirements do not consider the physiological effects of any consumable used with the product.

2 Components

2.1 A component that is also intended to perform other functions, shall comply additionally with the requirements of the applicable Standard(s) that cover devices that provide those functions.

2.2 A component shall be used in accordance with its rating established for the intended conditions of use.

2.3 A component of a product covered by this Outline is not required to comply with a specific requirement that:

a) Is superseded by a requirement in this Outline; or

b) Is separately investigated when forming part of another component, provided the component is used within its established rating and limitations.

2.4 Components not anticipated by the requirements of this Outline, not specifically covered by a component standard per 2.3, and which pose a potential risk of electric shock, fire or casualty hazard shall be additionally investigated. Reference to other product standards is appropriate where those standards anticipate normal and abnormal use conditions consistent with the application of this Outline.

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

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4 Undated References

4.1 Any undated reference to a code or standard appearing in the requirements of this Outline shall be interpreted as referring to the latest edition of that code or standard.

5 Glossary

5.1 For the purpose of this Outline the following definitions apply

5.2 ATOMIZER – A heating device that turns a liquid consumable into vapor.

5.3 BATTERY CASING – The container that directly encloses and confines the electrolyte and electrodes of a battery cell.

5.4 BATTERY CELL – The basic functional electrochemical unit containing an electrode assembly, electrolyte, separators, container, and terminals. It is a source of electrical energy by direct conversion of chemical energy.

5.5 BATTERY COMPARTMENT – A cavity or recess intended for battery pack insertion for electrical contact for charging and/or use.

5.6 BATTERY PACK – Battery cells contained in a protective enclosure or covering. A battery pack may also incorporate protective devices, battery pack management controls, charging circuits, and monitoring circuitry. A battery pack may be removable by the user for charging separately from the electronic cigarette. A battery pack as referenced in these requirements is considered a battery.

5.7 BATTERY SYSTEM – A combination of a battery pack, battery charger, charging interface (if provided), and monitoring and protection circuits intended for use with an atomizer.

5.8 CHARGING INTERFACE – An assembly used to hold a removable battery pack for connection to a charging system. The battery pack is removed from the battery interface before inserting into the battery compartment of the electronic cigarette.

5.9 CONSUMABLE – A substance such as glycol or a similarly based liquid, wicks, and other particulate matter, that is vaporized by an atomizer and inhaled by the user.

5.10 ELECTROLYTE LEAKAGE – A condition where liquid electrolyte escapes through an opening in a designed vent as well as through a rupture or crack or other unintended opening in the battery casing or enclosure of a battery cell or capacitor and is visible external to the battery pack.

5.11 ELECTRONIC CIGARETTE – An inhalant device with its battery pack installed used to vaporize a consumable, with all detachable charging systems removed.

5.12 ENCLOSURE – The outer cover of device that provides protection to its contents. The enclosure of an electronic cigarette is considered to be the outer cover of current carrying parts.

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