



MATERIAL SAFETY DATA SHEET
LED LAMP SPECIFICATION

Feit Electric brand LED Lamps, manufactured by FEIT ELCTRIC COMPANY, INC., are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are “articles.” The following information is provided by FEIT ELCTRIC as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled): **Feit Electric LED, Enhance, Vintage, Intellibulb, Smart Bulbs, Home Brite ,ProSeries, Color Choice, any “articles” containing LEDs.**

This data sheet covers all of the following types unless otherwise indicated: LED Light Bulbs, LED Night Lights. Any “articles” containing Light Emitting Diodes

Manufacturer: **FEIT ELECTRIC COMPANY, INC.**
4901 Gregg Rd
Pico Rivera, CA 90660
(562) 463-2852

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.

Lamp Assembly – Glass, Plastic and Metal – The glass is made from soda lime similar to that used throughout the glass industry for other common consumer items. The metals for the adapters and LEDs are generally made from various amounts of aluminum, tin, lead, copper, zinc, and nickel. None of these materials would present a potential hazard in the event of breakage of the lamp, aside from the hazard due to broken glass.

Phosphor in LEDs – (nuisance dust) phosphate mix using manganese, rare earth elements such as lanthanum, and yttrium as either an oxide or as a phosphate, along with a barium/aluminum oxide all are tightly bound in the phosphor matrix. These phosphors produce better lamp efficiency and color rendition. The phosphor components may vary slightly depending on the color of the lamp. Some lamps may contain a thin coating of tin oxide inside the glass.

LEDs – The LEDs consist of metal and InGaN (Indium Gallium Nitride) semiconductor chip. Due to their insolubility and inertness, these materials do not present a significant hazard.

ELECTRONIC LED DRIVER – The electronic LED driver in most cases is built into the lamp housing. The driver consists of parts similar to other parts used in the electronic business for a variety of consumer electronic products.

PLASTIC – This product contains high molecular weight polymers (plastics) that are not considered hazardous.

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Not applicable to intact lamp

V. HEALTH HAZARD

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. *No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.*

Phosphor There have been no significant adverse effects on humans by ingestion, inhalation, skin contact, or eye contact. Antimony, manganese, yttrium and tin compounds are characterized by OSHA as hazardous chemicals, however, due to their insolubility, relatively low toxicity and small amount present in the phosphor and lamp, these materials do not present a significant hazard in the event of breakage of the lamp

Glass Glass dust is considered to be physiologically inert and as such has an OSHA exposure limit of 15-mg/cubic meter for total dust and 5-mg/cubic meter for respirable dust. Perform normal first aid procedures. Seek medical attention as required.

Inhalation If discomfort, irritation or symptoms of pulmonary involvement should develop, remove from exposure and seek medical attention.

Ingestion In the unlikely event of ingestion of large quantity of material, seek medical attention.

Contact Wash eyes/skin, including under eyelids, immediately with copious amounts of water and
Eye/Skin seek medical attention.

VI. PROCEDURES FOR DISPOSAL OF LAMPS

Take usual precautions for collection of broken glass. Place materials in closed containers to avoid generating dust. For field disposal the lead in the soldering is considered hazardous waste and must be disposed of by applicable federal, state and local regulations.

Although FEIT ELECTRIC attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

Issue Date: January 17, 2019

In case of questions, please call: FEIT ELECTRIC (562) 463-2852

Material Safety Data Sheet

For

Roof Energy Technology (Baoshan) Co., Ltd

Roof Industrial Zone, Baoshan Industrial Park, Longyang District, Baoshan, Yunnan P. R. China

And for their product

Lithium ion Cell

Model/type reference: INR18650-2200A

Nominal Voltage: 3.7V

Typical Capacity: 2200mAh (8.14Wh)

Version number: V1.0

Revision date: N/A.

Laboratory: **Shenzhen NTEK Testing Technology Co., Ltd.**

Address: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P. R. China

Compiled by (name+ signature) ...: Ruby Luo

Approved by (+ signature): Kevin Zou



Shenzhen NTEK Testing Technology Co., Ltd.

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Section 1- Chemical Product and Company Identification

Product Identification: Lithium ion Cell

Model No.: INR18650-2200A

Manufacturer's/ Supplier Name: Roofer Energy Technology (Baoshan) Co., Ltd

Address: Roofer Industrial Zone, Baoshan Industrial Park, Longyang District, Baoshan, Yunnan P. R. China

Telephone number of the supplier: +86-755-33239825

Emergency Telephone No. (24h): +86-755-33239825

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E-mail address: hmpz@roofer.com.cn

Preparation Date: 2018-01-05

This MSDS was prepared by Shenzhen NTEK Testing Technology Co., Ltd.

Item Number: SNB171222005001E

Referenced documents: ISO 11014:2009 Safety data sheet for chemical products

Section 2 – Hazards Identification

Preparation hazards and classification	Not dangerous with normal use. Do not dismantle, open or shred the Lithium ion Cell ingredients contained within or their ingredients products could be harmful.
Appearance, Color, and Odor	Solid object with no odor, no color.
Primary Route(s) of Exposure	These chemicals are contained in a sealed enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact
Potential Health Effects:	<p>ACUTE (short term): see Section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns.</p> <p>Inhalation: Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation.</p> <p>Ingestion: Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.</p> <p>Skin: Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin.</p> <p>Eye: Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye.</p> <p>CHRONIC (long term): see Section 11 for additional toxicological data</p>



Medical Conditions Aggravated by Exposure	Not applicable
Reported as carcinogen	Not applicable

Section 3 – Composition/Information on Ingredients

Lithium ion Cell is a mixture.

Hazardous Ingredients (Chemical Name)	Concentration or concentration ranges (%)	CAS Number
Lithium cobalt oxide	≤40	12190-79-3
Graphite (C)	≤18	7782-42-5
Phosphate(1-), hexafluoro-, lithium	≤18	21324-40-3
Copper	≤10	7440-50-8
Aluminum	≤5	7429-90-5
PVC (Chloroethylene, polymer)	≤3	9002-86-2
PVDF	≤5	24937-79-9
Nickel	≤1	7440-02-0

Labeling according to EC directives.

No symbol and risk phrase are required.

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not applicable.

Section 4 – First-aid Measures

Inhalation	If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice.
Skin contact	If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.
Eye contact	If eye contact with contents of an open battery occurs, immediately flush the

	contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.
Ingestion	If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.

Section 5 – Fire-fighting Measures

Flammable Properties	In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.
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Suitable extinguishing Media	Use extinguishing media suitable for the materials that are burning.
Unsuitable extinguishing Media	Not available
Explosion Data	Sensitivity to Mechanical Impact: This may result in rupture in extreme cases Sensitivity to Static Discharge: Not Applicable
Specific Hazards arising from the chemical	Fires involving Lithium ion Cell are controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire
Protective Equipment and precautions for firefighters	As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.
NFPA	Health: 0 Flammability: 0 Instability: 0

Section 6 – Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8.
Environmental Precautions	Prevent material from contaminating soil and from entering sewers or waterways.
Methods and materials for Containment	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
Methods and materials for cleaning up	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.

Section 7 – Handling and Storage

Handling	<p>Don't handle Lithium ion Cell with metalwork. Do not open, disassemble, crush or burn battery. Ensure good ventilation/ exhaustion at the workplace.</p> <p>Prevent formation of dust.</p> <p>Information about protection against explosions and fires: Keep ignition sources away- Do not smoke.</p>
Storage	<p>If the Lithium ion Cell is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium ion Cell periodically.</p> <p>3 months: -10°C~+40°C, 45 to 85%RH</p> <p>And recommended at 0°C~+35°C for long period storage.</p> <p>The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more.</p> <p>The voltage for a long time storage shall be 3.7V~4.2V range.</p> <p>Do not store Lithium ion Cell haphazardly in a box or drawer where they may short-circuit each</p>



	<p>other or be short-circuited by other metal objects.</p> <p>Keep out of reach of children.</p> <p>Do not expose Lithium ion Cell to heat or fire. Avoid storage in direct sunlight.</p> <p>Do not store together with oxidizing and acidic materials.</p>
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Section 8 – Exposure Controls and Personal Protection

Engineering Controls	<p>Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor.</p> <p>Keep away from heat and open flame. Store in a cool, dry place.</p>
Personal Protective Equipment	<p>Respiratory Protection: Not necessary under normal conditions.</p> <p>Skin and body Protection: Not necessary under normal conditions, Wear neoprene or nitrile rubber gloves if handling an open or leaking battery.</p> <p>Hand protection: Wear neoprene or natural rubber material gloves if handling an open or leaking battery.</p> <p>Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.</p>
Other Protective Equipment	<p>Have a safety shower and eye wash fountain readily available in the immediate work area.</p>
Hygiene Measures	<p>Do not eat, drink, or smoke in work area.</p> <p>Maintain good housekeeping.</p>

Section 9 - Physical and Chemical Properties

Physical State	Form: Solid
	Color: Green
	Odor: Odorless
Change in condition:	
pH, with indication of the concentration	Not applicable

Melting point/freezing point	Not available.
Boiling Point, initial boiling point and Boiling range:	Not available.
Flash Point	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapor Pressure:	Not applicable
Vapor Density: (Air = 1)	Not applicable
Density/relative density	Not available.
Solubility in Water:	Insoluble
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	130°C
Decomposition temperature	Not available.
Odour threshold	Not available.
Evaporation rate	Not available.
Flammability (soil, gas)	Not available.
Viscosity	Not applicable

Section 10 - Stability and Reactivity

Stability	The product is stable under normal conditions.
Conditions to Avoid (e.g. static discharge, shock or vibration)	Do not subject Lithium ion Cell to mechanical shock. Vibration encountered during transportation does not cause leakage, fire or explosion. Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse.
Incompatible Materials	Not Available
Hazardous Decomposition Products	This material may release toxic fumes if burned or exposed to fire
Possibility of Hazardous Reaction	Not Available

Section 11 - Toxicological Information

Irritation	Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to
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	the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
Sensitization	Not Available
Neurological Effects	Not Available
Teratoaenicity	Not Available
Reproductive Toxicity	Not Available
Mutagenicity (Genetic Effects)	Not Available
Toxicologically Synergistic Materials	Not Available

Section 12 - Ecological Information

General note:	Water hazard class 1(Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Anticipated behavior of a chemical product in environment/possible environmental impact/ecotoxicity	Not Available
Mobility in soil	Not Available

Persistence and Degradability	Not Available
Bioaccumulation potential	Not Available
Other Adverse Effects	Not Available

Section 13 – Disposal Considerations

Product disposal recommendation: Observe local, state and federal laws and regulations.

Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.



The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

***** End of MSDS *****

Logy Co., Inc.