



## PRODUCT SAFETY DOCUMENT

### UN3480 Lithium Ion Batteries

Fiat 500 bev\_Chrysler 63Ah Series production  
\_CS0630R0001G

Mopar (FCA LLC Service & Customer Care Division)

Issue Date: 10 January 2020 Rev# 1

GHS USA EN

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## SECTION 1 IDENTIFICATION

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The lithium ion batteries described within this document are sealed units and when used according to our recommendations are not hazardous under normal conditions of use and are non-reactive provided battery integrity is maintained and seals remain intact. Risk of exposure is only the result of abuse (e.g., mechanical, thermal, or electrical), and can lead to potential exposure to electrolyte through leakage, electrode materials reaction with moisture/water, or battery vent/fire/explosion depending on circumstances and abuse.

As a solid, manufactured article, exposure to hazardous ingredients is not expected with normal use. This battery is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement. Regulation EC # 1907/2006 EC defines these batteries as “no substances” or “preparation” and the batteries are to be regarded as “articles” because no substances are intended to be released during handling. Therefore, pursuant to regulation (EC) 1907/2006, Article 31, there is no regulatory or legal obligation to provide a Material Safety Data Sheet (MSDS) / Safety Data Sheet (SDS).

The information contained in this Product Safety Document contains valuable information critical to the safe handling and proper use of the product. Compliance with all applicable regulations on the subject is the responsibility of the supplier.

This document does not replace any specifications or regulations requested by FCA, such as the CS 9003, CS-A0403, etc. This document does not replace any European, national or local law and is a way to communicate sufficient information to allow safe use by end users and to allow operators to take appropriate risk management measures in all the phases of the battery life cycle, including disposal / recycling.

### Section 1.1: PRODUCT IDENTIFIER

Name, address, and telephone number of the manufacturer, importer, or other responsible party are provided in the attached UN38.3 Test Summary Document for new battery product. Only prototype batteries are not required to have a UN 38.3 Test Summary Document.

**Manufacturer:** Bosch (Samsung)

**Commercial Model Identifier:** Fiat 500 bev\_Chrysler 63Ah Series production \_CS0630R0001G

**Product name:** UN3480 Lithium-ion rechargeable batteries

**Synonyms:** Multiple

**Proper shipping name:** Lithium-ion batteries *including lithium ion polymer batteries*

**Other means of identification:** Not Available

### **Section 1.2: PRODUCT USE**

Recommended use of the battery and restrictions on use should be in accordance with manufacturer's directions.

### **Section 1.3: SUPPLIER PRODUCT SAFETY INFORMATION**

**Registered company name:** Mopar (FCA US LLC Service & Customer Care Division)

**Address:** 26311 Lawrence Avenue, Center Line Michigan 48015 United States

**Telephone:** 1-800-846-6727

**Fax number:** Not Available

**Website:** Not Available

**Email:** [moparsds@fcagroup.com](mailto:moparsds@fcagroup.com)

### **Section 1.4: EMERGENCY PHONE NUMBER**

**Association / Organization:** CHEMTREC (CCN 4824)

**Emergency telephone numbers:** +1 703-527-3887 (collect calls accepted)

**Other emergency telephone numbers (Mexico):** 01-800-681-9531

**Other emergency telephone numbers (Italy):** 800-789-767

**Other emergency telephone numbers (Germany):** 0800-181-7059

**Other emergency telephone numbers (France):** +(33) 975181407

**Other emergency telephone numbers (USA and Canada):** 1-800-424-9300

**Other emergency telephone numbers (FCA Industrial Hygiene USA and Canada):** 1-248-512-8002

## **SECTION 2 HAZARD IDENTIFICATION**

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The battery has a hermetically sealed metallic housing. The materials contained within the battery represent a potential hazard only if the integrity of the cell housing is compromised by mechanical, thermal, or electrical abuse of the cell. Undamaged, closed cells do not represent a danger to health. Dispose of contents/container in accordance with local laws and regulations.

### **Section 2.1: ELECTRIC HAZARD**

- High voltage cables are identified by their orange color.
- Indications of possible contacts: In normal conditions of use, the electrode materials and the electrolyte are not exposed to the users provided that the integrity of the battery is maintained and that the gaskets remain intact.
- Conditions when battery can be dangerous: If it has suffered damage that may be mechanical, thermal and / or electrical.
- Consequences if the battery is damaged: Injury to people, including the loss of lives, is possible if damaged. **Therefore, do not short circuit, puncture, incinerate, crush, immerse, force energy discharge or expose to temperatures exceeding the**

**declared operating temperature range.** A battery, even under normally discharged conditions, may contain substantial electric charges and cause injury or death, if handled improperly.

## **Section 2.2: HAZARD IN THE EVENT OF MECHANICAL DAMAGE**

To avoid mechanical damage to the battery, these items must be kept in cool dry place. Keep away from heat and open flame.

Mechanical damage to the battery can lead to a number of dangerous conditions, including, but not limited to:

- Leakage of electrolyte from the cell/battery/module.
- Rapid heating of the individual cell/battery/module due to the exothermic reaction of the ingredients making up the cell/battery/module (thermal runaway), including the venting from the cell/battery/module, the propagation of self-heating reactions and of thermal instability which can involve neighboring cells.
- Fire.

## **Section 2.3: HAZARD ASSOCIATED TO EXPOSURE AT HIGH TEMPERATURES**

Do not expose to temperatures outside -40°C to +60°C. Exposure of battery to high temperatures can cause overheating of cell/battery, causing a fire, forming toxic gases of hydrogen fluoride, hydrogen gas, methane, ethane, ethylene, carbon monoxide and carbon dioxide might be released. Damaged, short circuit and / or breached cell/battery/module can result in rapid heating and potential release of flammable vapors, fire, burst or explosion. If heated above 80°C, cell/battery/module can explode/vent.

## **Section 2.4: HAZARD ASSOCIATED WITH ELECTROLYTE LEAKAGE**

If you discover a leaking battery, make sure you are adequately protected from the battery's electrolyte, which can cause burns on the skin. If a battery spill occurs in the workplace, you have to be trained and authorized by your employer to clean up the spill.

## **Section 2.5: HAZARD ASSOCIATED WITH VENTING OF THE ELECTROLYTE**

Exposure of battery/modules to high temperatures can cause overheating of cells, causing a fire, forming toxic gases of hydrogen fluoride, hydrogen gas, methane, ethane, ethylene, carbon monoxide and carbon dioxide might be released. Damaged, short circuit and / or breached cells can result in rapid heating and potential release of flammable vapors, fire, burst or explosion. If heated above 80°C, cell/battery/module can explode/vent.

## **Section 2.6: OSHA/GHS REGULATORY STATUS**

This product is an article which contains a chemical substance. Safety information is given for exposure to the article as solid, but considers exposure to the chemical if the user has direct eye and skin contact with the chemical. This product is an article which contains a sealed battery and as such does not require an SDS per the OSHA Hazard Communication Standard.

## **Section 2.7: LABEL ELEMENTS – EU Specific**

Follow the label used with the normative references adopted by EU or by Member State. The aforementioned normative references must also be listed in section 15 of this document. From the date of emission/revision of this document, the congruency between the document and the label affixed to the HVBS has to be guaranteed.

UN Regulation R10 Uniform provisions concerning the approval of vehicles with regard to electromagnetic compatibility (R10.05.01).

DECRETO LEGISLATIVO 20 novembre 2008, n. 188 (Attuazione Direttiva 2006/66/CE)



### SECTION 3 COMPOSITION OF INGREDIENTS

| Component                 | CAS No     | %[weight] | Name                                                                                  |
|---------------------------|------------|-----------|---------------------------------------------------------------------------------------|
| Active Positive Electrode | Mixture    | 10-50     | Mixed Metal Oxide (e.g., Lithium, Nickel, Iron, Phosphorous, Cobalt, Manganese Oxide) |
| Active Negative Electrode | 7782-42-5  | 0-20      | Graphite                                                                              |
| Active Negative Electrode | 7440-44-0  | 0-30      | Carbon                                                                                |
| Electrolyte               | Mixture    | 10-60     | Mixed Organic Carbonate                                                               |
| Binder/Plastic Parts      | 24937-79-9 | <4        | Polymer                                                                               |
| Binder/Plastic Parts      | 9002-88-4  | <10       | Polymer                                                                               |
| Binder/Plastic Parts      | 68608-59-3 | <10       | Polymer                                                                               |
| Metal Parts               | 7429-90-5  | 1-15      | Aluminum Foil                                                                         |
| Metal Parts               | 7440-50-8  | 3-30      | Copper Foil                                                                           |
| Metal Parts               | 7439-89-6  | 0-20      | Iron Metal                                                                            |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

- Lithium-Equivalent Contended in cell/battery= 1,880 g
- WH (Watt Hours) = 235 Wh

### SECTION 4 FIRST AID MEASURES

#### EXPOSURE IS NOT EXPECTED FOR PRODUCT UNDER NORMAL CONDITIONS OF USE.

The following first aid measures might be required **only after damage of the external battery casing**:

#### First aid is upon rupture of sealed battery:

**Eye Contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

**Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician immediately.

**Inhalation:** Move to fresh air. If symptoms persist, call a physician immediately. Administer oxygen if breathing is difficult and you are trained. If breathing stopped, contact medical services immediately.

**Ingestion:** Call a physician immediately. Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

## SECTION 5 FIREFIGHTING MEASURES

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### Section 5.1: EXTINGUISH MEDIA

Use extinguishing media suitable for the materials that are burning. Dry chemical, foam, or CO<sub>2</sub> extinguishers. CO<sub>2</sub> extinguishers, generous amounts of water spray, copious quantities of water or water-based foam can be used to cool down burning Li-ion cells and batteries.

### Section 5.2: SPECIAL HAZARDS ARISING FROM THE PRODUCT

If possible, remove cell/battery/module from firefighting area. If heated above 80°C, cell(s) can explode/vent.

### Section 5.3: RECOMMENDATIONS FOR FIRE-FIGHTERS/FIRST RESPONDERS

Battery is not flammable, but internal organic material will burn if the cell/battery/module is incinerated. Combustion products include, but are not limited to hydrogen fluoride, hydrogen gas, methane, ethane, ethylene, carbon monoxide and/or carbon dioxide.

### Section 5.4: FIREFIGHTING EQUIPMENT

Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) full protective gear

## SECTION 6 ACCIDENTAL RELEASE MEASURES

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### Section 6.1: PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY RESPONSE

Utilize appropriate Personal Protective Equipment (PPE), as required. Avoid contact with skin, eyes and clothing. Avoid breathing fumes and gas.

### Section 6.2: ENVIRONMENTAL PRECAUTIONS

**ON LAND:** Place material into suitable containers and call local fire/police department. Dispose according to the local laws, rules and regulations.

**IN WATER:** If possible, remove from water and call local fire/police department. Do not discharge spent liquids or wastewater to surface waters, ground waters, canalization or other potable drinking water. Properly dispose of liquids/wastewaters and all materials in accordance with applicable local legal and other laws, rules, regulation requirements.

### Section 6.3: METHODS AND MATERIAL FOR CONTAINMENT AND CLEAN UP

Methods for cleaning up by trained individuals: Utilize dry sand or vermiculite or cellulose paper to absorb spilled electrolyte on surfaces.

### Section 6.4: REFERENCE TO OTHER SECTIONS

Prevention of secondary hazards: Avoid re-scattering. Do not bring the collected materials close to fire.

## SECTION 7 HANDLING AND STORAGE

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### Section 7.1: PRECAUTIONS FOR SAFE HANDLING

- Do not open, puncture, drop, disassemble, crush or burn.
- Do not expose to temperatures outside -40°C to +60°C.
- Keep container closed in a dry and well ventilated place.
- Avoid short circuiting the battery.
- Do not overcharge, do not deep discharge, use recommended charging and discharging conditions.
- Do not expose to fire or open flame, hot surfaces and sources of ignition or heat above 80°C.
- Do not incinerate.
- Avoid contact of the cells/battery electrical conducting liquids/fluids.

**In case of rupture:** Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Do not breathe vapors/dust.

#### **Section 7.2: CONDITIONS FOR SAFE STORAGE**

- Do not expose to temperatures outside -40°C to +60°C.
- Keep container closed in a cool, dry and well ventilated place.
- Keep in closed original container.
- Protect from physical damage and short circuits.
- Store batteries in accordance with local laws, regulations, rules and ordinances including fire safety/protection criteria.
- Store batteries in accordance with manufacturers' temperature, humidity, State of Charge (SOC), and storage recommendations.
- Verify storage conditions are in accordance with manufacturers' battery capacity degradation curve constraints.

### **SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

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#### **Section 8.1: CONTROL PARAMETERS**

**EXPOSURE IS NOT EXPECTED FOR PRODUCT UNDER NORMAL CONDITIONS OF USE.** However, in case of rupture control parameters must be compliant with occupational health regulations.

#### **Section 8.2: EXPOSURE CONTROLS (MECHANICAL, ELECTRICAL, CHEMICAL)**

**EXPOSURE IS NOT EXPECTED FOR PRODUCT UNDER NORMAL CONDITIONS OF USE.** However, in case of rupture:

**Respirator:** Not required during normal operations. SCBA required in the event of a fire.

**Eye/face protection:** Not required beyond safety practices of employer. Chemical Splash goggles and a face shield are recommended where exposure is possible.

**Gloves:** Not required for handling of battery. PVC Gauntlet-type gloves with rough finish are recommended where exposure is possible.

**Foot protection:** Steel toed shoes recommended for large container handling.

### **SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

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Not applicable if battery housing is not damaged.

#### **Section 9.1: INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

**State:** Solid

**Odor:** N/A

**pH:** N/A

**Vapor Pressure:** N/A

**Vapor density:** N/A

**Boiling point:** N/A

**Solubility in water:** Insoluble

**Specific gravity:** N/A

**Density:** N/A

## **SECTION 10 STABILITY AND REACTIVITY**

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### **Section 10.1: REACTIVITY**

None - Stable under normal conditions of use, storage and handling.

### **Section 10.2: CHEMICAL STABILITY**

None - Stable under normal conditions of use, storage and handling.

### **Section 10.3: POSSIBILITY OF HAZARDOUS REACTIONS**

None - Stable under normal conditions of use, storage and handling.

### **Section 10.4: CONDITIONS TO AVOID**

Avoid exposure to heat and open flame. Do not puncture, drop, crush or incinerate.

### **Section 10.5: INCOMPATIBLE MATERIALS**

None during normal operation. Avoid exposure to heat, open flame, and corrosives.

### **Section 10.6: HAZARDOUS DECOMPOSITION PRODUCTS**

None during normal operating conditions. If cell/battery/module are opened, hydrogen fluoride, hydrogen gas, methane, ethane, ethylene, carbon monoxide and carbon dioxide might be released. Damaged, short circuit and / or breached cell/battery/modules can result in rapid heating and potential release of flammable vapors, fire, burst or explosion.

## **SECTION 11 TOXICOLOGICAL INFORMATION**

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If appropriately handled and if in accordance with the general hygienic rules, no damages to health have become known.

## **SECTION 12 ECOLOGICAL INFORMATION**

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Ecological damage is not known or expected under normal use.

## **SECTION 13 DISPOSAL CONSIDERATIONS**

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### **Section 13.1: WASTE DISPOSAL METHODS**

Dispose of in accordance with federal, state and local regulations. Recommended recycling in accordance with federal, state and local regulations. Do not release into the environment.

### **Section 13.2: CONTAMINATED PACKAGING**

Dispose of in accordance with federal, state and local laws and regulations.

### **Section 13.3: EU CONSIDERATIONS**

In all the European countries, it is necessary to be compliant with the rules of the 2006/66/Ce directive and national laws; the producer obligation is assigned to the companies placing batteries on the market for the first time in their country. Suppliers and vehicle manufacturer have to define in the commercial contract details on the battery management during warranty period and at the end of the life of the battery at dealer/plants/ dismantlers.

## **SECTION 14 TRANSPORT INFORMATION**

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*This product tested and fulfilled the requirements and conditions according to the UN Recommendations on the Transport of Dangerous Goods (UN38.3 testing).*

### **Land transport (US DOT 49 CFR 172.101/Canada TDG)**

ID Number: UN3480

Proper shipping name: Lithium-ion batteries *including lithium ion polymer batteries*

Hazard Class or Division: 9

Packing group: N/A

Label: 9



US Special Provisions: 422, A54, A100

US Exceptions: 49 CFR 173.185

Canada Special Provisions: 34, 123, 137, 138, 149, 159

Canada Excepted Quantities: E0

Emergency Response Guide Number: 147

### **Land transport (ADR/RID)**

UN number: 3480

Proper shipping name: Lithium-ion batteries *including lithium ion polymer batteries*

ADR/RID class: 9

Classification code: M4

Warning plate Hazard label: 9



ADR/RID packing group: II

Limited quantity: LQ 0

Tunnel restriction code: E

LQ 0: No exemption under the conditions of 3.4.2.

Transport category: 2

Special Provisions: 188, 230, 310, 348, 376, 377, 387, 636

Packing Instructions: P903, P908, P909, P911, LP903, LP904, LP905, LP906

### **Marine transport (IMO/IMDG)**

UN number: 3480

Proper shipping name: Lithium-ion batteries *including lithium ion polymer batteries*

IMDG code: 9

Marine pollutant: No

Hazard label: 9



IMDG packing group: II

EmS: F-A, S-I

Limited quantity: None

Packing Instruction: P903

Special Provisions: 188, 230, 310, 957

### **Air transport (ICAO/IATA)**

UN/ID number: 3480

Proper shipping name: Lithium-ion batteries *including lithium ion polymer batteries*

ICAO/IATA-DGR: 9

Hazard label: 9



ICAO packing group: II

Limited quantity Passenger: -

IATA-packing instructions - Passenger: 965

IATA-max. quantity - Passenger: 5 kg

IATA-packing instructions - Cargo: 965

IATA-max. quantity - Cargo: 35 kg

State of Charge: <30%

Special Provision: A45, A88, A99

ERG Code: 9F

## SECTION 15 REGULATORY INFORMATION

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**TSCA:** Complies

**DSL:** Does not comply

**EINECS/ENCS:** Does not comply

**IECSC:** Does not comply

**KECL:** Does not comply

**PICCS:** Does not comply

**AICS:** Does not comply

**REACH** - EC Reg. 1907/2006 - This Article does not contain SVHC or substances listed in Annex XIV or in Annex XVII

**Seveso III** - e.g., specify if the article does not fall within the scope of application of Legislative Decree no. 105 of June 26, 2015.

**UN Regulation No. 100 Revision 2** - Amendment 3

**Supplement 3 to the 2 series of amendments** – Date of entry into force: 18 June 2016

Uniform provisions concerning the approval of vehicles with regard to specific requirements for the electric power train UN

**Regulation No. 10 Revision 5** - Amendment 1

**Supplement 1 to the 05 series of amendments** – Date of entry into force: 8 October 2016

Uniform provisions concerning the approval of vehicles with regard to electromagnetic compatibility

**DECRETO LEGISLATIVO 19 maggio 2016, n. 86** (attuazione Direttiva 2014/35/UE)

**DIRECTIVE 2014/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

**UNECE ECE R100**

**DECRETO LEGISLATIVO 20 November 2008, n. 188** (attuazione Direttiva 2006/66/CE)

## SECTION 16 OTHER INFORMATION

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The information provided in this document is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.