BATTERY DATA SHEET

DYSON BATTERY PACK 7-CELL (206340)

Revision: 07
Revised date: 30-Jan-2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
IMPORTANT NOTE: *As a solid, manufactured article, exposure to hazardous ingredients is not expected in normal use condition. This battery is an article persuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement. The information contained in this Material Safety Data Sheet contain useful information critical to the safe handling and proper use of the battery.*

Product Name	Battery Pack 7-Cell (206340)
Part Number	206340 Battery Pack Assembly
Product Category	Lithium-ion Rechargeable Battery Pack
Battery Pack Rated Voltage	25.2 V
Battery Pack Rated Capacity	2600 mAh
Battery Pack Rated Energy	66 Wh

1.3. Details of the supplier of the safety data sheet

Company	Dyson Limited
Address	Tetbury Hill Malmesbury Wiltshire England SN16 0RP United Kingdom
Web	www.dyson.com
Telephone	+44 (0) 800 298 0298
Fax	-
Email	GlobalCompliance@dyson.com

1.4. Emergency telephone number

Emergency telephone number	+44 (0) 203 394 9857

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Class Name	Under normal condition of use Dyson battery pack presents no risk of exposure. Risk of exposure occurs only if the battery pack is physically abused. Organic electrolyte leakage from abused cells is flammable. Vapour from burning batteries and plastic case may cause eye, skin and respiratory irritation. This material is not classified by the 2012 OSHA Hazard Communication Standard (29 CFR 1910 1200) and no further GHS elements are needed

2.2. Label elements

CLP Label Elements	Not Applicable

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SECTION 3: Composition/information on ingredients

	Battery Pack 7-Cell (206340) uses seven Sony US18650VTC5D lithium-ion rechargeable cells controlled with a battery management PCB. The cells are connected in a string of 7 cells in series. The cells does not contain metallic lithium or lithium alloy.

Battery Pack Level

Enclosure	**Plastic (Polycarbonate / Acrylonitrile Butadiene Styrene)**
Cell Cage	**Flame Retarded Polycarbonate / Glass Filled Polycarbonate / Flame Retarded Polypropylene**

Cell Level

Chemical Name	**CAS No.**	**% weight**
Lithium Cobalt Nickel Oxide	113066-89-0	37%
Others (Trade Secret)	-	63%

SECTION 4: First aid measures

4.2. Most important symptoms and effects, both acute and delayed
Battery pack contains organic electrolyte. In case of electrolyte leakage from battery, actions described below are required.

Inhalation	No Symptoms.
Eye contact	There may be irritation and redness.
Skin contact	There may be irritation and redness.
Ingestion	There may be irritation of the throat.

4.3. Indication of any immediate medical attention and special treatment needed

Inhalation	Move the exposed person to fresh air.
Eye contact	Bathe the eye with running water for 15 minutes, if eye irritation persists seek medical attention.
Skin contact	Wash off immediately with plenty of soap and water.
Ingestion	Wash out mouth with water and drink plenty of water.

SECTION 5: Firefighting measures

	In case of fire, use CO_2, dry chemical powder extinguishers. Since irritant and corrosive gas may be produced by battery pack on fire, use self-contained breathing apparatus while extinguishing fire when danger is predicted. Move batteries to a safer place immediately if a fire breaks out nearby. Use a large amount of water as a supportive measure to cool the exterior of batteries if exposed to fire to prevent rupture

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

	In the unlikely event that liquid leaks from the battery, Wear personal protective equipment (Safety gloves, goggles and gas mask for organic gases). Avoid skin contact.

6.2. Environmental precautions

	Dispose of damaged battery pack in accordance with federal, state and local regulations. Cover battery pack terminals to prevent accidental short-circuit when batteries are mixed.

6.3. Methods and material for containment and cleaning up

	Use absorbent material (sand, vermiculite, etc.) to absorb any exuded material. Seal leaking battery (unless hot) and contaminated absorbent in a plastic bag and dispose of in accordance with local regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

	Do not disassemble, open, remodel, or solder. Do not short + and – terminals with metal. Charge with a Dyson charger designed for use with this battery pack. The battery may present a risk of fire or burns if mistreated. Do not disassemble, crush, short contacts, heat above 140°F (100°C), or incinerate. Do not use pack if damaged.

7.2. Conditions for safe storage, including any incompatibilities

	Store at < 45°C. Avoid overheating, e.g. through incident solar radiation or radiant heat source. Do not expose to water or condensation.

SECTION 8: Exposure controls/personal protection

8.2. Exposure controls

	Personal Protection is not required under normal usage. In the unlikely event that liquid leaks from the battery do not touch the liquid. Provide appropriate ventilation, do not inhale vapour, use gas masks for organic gases if necessary. Wear safety glasses, safety gloves, and clean up according to Section 6.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State	Solid
Colour	N/A
Odour	None
pH-	N/A
Relative density	N/A
Solubility in water (g/L)	Insoluble

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SECTION 10: Stability and reactivity

10.2. Chemical stability

	Stable under normal conditions.

10.4. Conditions to avoid

	High temperature (>100°C) exposure of battery pack. Deformation by crush will cause generation of heat and ignition. Avoid mechanical or electrical abuse. Avoid contact with corrosive chemicals.

SECTION 11: Toxicological information

	No information as a battery pack

SECTION 12: Ecological information

	No information as a battery pack

SECTION 13: Disposal considerations

Disposal methods	Dispose of damaged battery pack in accordance with federal, state and local regulations. Cover battery pack terminals to prevent accidental short-circuit when batteries are mixed.

SECTION 14: Transport information

ADR
ICAO-IATA/ DGR
IMDG-Code
ADN

UN Number : 3480 or 3481
UN Proper Shipping Name : 3480 – Lithium Ion Batteries
3481 – Lithium Ion Batteries Contained in Equipment
3481 – Lithium Ion Batteries Packed with Equipment
Class : 9
Subsidiary Risk : -
Hazard Label : Class 9, Miscellanous Dangerous Goods or Miscellanous Lithium Batteries
Handling Label : Lithium Battery Label
Packing Group : Nil

Lithium Ion batteries are considered to be "Rechargeable batteries" and meet the requirements of transportation by the U.S. Department of Transportation(DOT), the International Civil Aviation Administration(ICAO), the International Maritime Dangerous Goods (IMDG) Code.

Land (ADN): 3480 – 188, 230, 310, 348 (Special packaging instruction P903 applies).
3481 – 188, 230, 248, 360 (Special packaging instruction P903 applies).

Sea (IMDG): 188, 230, 310 (Special packaging instruction P903 applies).
EmS: F-A, S-I; Stowage Category A
IMDG Code: 9033

Air (IATA**):** A48, A88, A99, A154, A164, A181, A183, A185, A201, A206, A331 (Packing Instruction 965, 966, 967).
Lithium ion batteries - Lithium ion batteries in compliance with Section of PI 965.
Lithium ion batteries packed with equipment - Lithium ion batteries in compliance with Section of PI 966.
Lithium ion batteries contained in equipment - Lithium ion batteries in compliance with Section of PI 967

The general and additional requirements apply to all lithium ion batteries prepared for air transport according to this packing instruction:

General Requirement:

1) Each cell and battery is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3.

2) Batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive material within the same packaging that could lead to a short circuit

ADR **ICAO-IATA/ DGR** **IMDG-Code** **ADN**	**Lithium ion batteries - Lithium ion batteries in compliance with Section of PI 965**. 1) Section IB applies to lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities that exceed the allowance permitted in Section II, Table 965-II. Quantities of lithium ion batteries that exceed the allowance permitted in Section II, Table 965-II must be assigned to Class 9 and are subject to all of the applicable provisions of Regulation. 2) Section II applies to lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities not exceeding the allowance permitted in Section II, Table 965-II 3) Each package must capable of withstanding a 1.2m drop test in any orientation without: - damage to batteries contained therein; - shifting of the contents so as to allow battery to battery (or cell to cell) contact; - release of contents 4) Each package must be labelled with a lithium battery handling label UN 3480, PI 965, Section IA and IB. Lithium ion cells and batteries must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity. Cells and/or batteries at a SoC of greater than 30% may only be shipped with the approval of the State of Origin and the State of the Operator under the written conditions established by those authorities. UN 3480, PI 965, Section IA and IB are forbidden for carriage on passenger aircraft. All packages must bear the Cargo Aircraft Only label in addition to the other marks and labels required by the Regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulations	▪ IMDG Code : International Maritime Dangerous Goods (IMDG) Code 2017 Edition ▪ ICAO TI: International Civil Aviation Organation (ICOA) Technical Instructions for the Safe Transport of Dangerous Goods by Air 2017-2018 Edition ▪ IATA DGR: International Air Transport Association (IATA) Dangerous Goods Regulation 58th Edition

Further information

	The regulatory information given above only indicates the principle regulations specifically applicable to the product described in the safety data sheet. Attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

SECTION 16: Other information

Further information

Legal Disclaimer	The information contained within is provided for your information only. The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, Dyson Ltd makes no warranty, either expressed or implied, with respect to this information and disclaims all liability from reliance on it.