



Section 1. Product and Company Identification.

- 1.1 Model Number;** CP3005BP v1
- 1.2 Description;** Cordless Power Tool Battery Lithium-ion 18V for CP3005
- 1.3 Manufacturer;**
Sealey Group.
Kempson Way,
Bury St. Edmunds,
Suffolk.
IP32 7AR
- 1.4 Emergency telephone number;** 44 (0) 1284 757 500

Date of source compilation; 18 June 2013

Section 2. Hazards Identification.

Invasion routes; eyes, skin contact, ingestion.

Health Hazard; Harmful if swallowed. Safe under normal conditions of use. Contents are non-reactive when the battery integrity and seals remain intact. DO NOT OPEN or DISMANTLE. DO NOT EXPOSE TO FIRE or NAKED FLAME. Burn / Explosion / Fire risks; do not mix with varying chemistries, sizes & types of battery. Do not crush or incinerate.

Environmental hazard; the internal electrolyte may cause adverse environmental impact.

Danger of fire and explosion; risk is increased by high temperature and short circuit.

Section 3. Substances.

| 3.1 Chemical Name (substance) | 3.1 CAS No. | 3.2 Percentage of Content (mixture) |
|--|-------------|-------------------------------------|
| Lithium Nickel Cobalt Manganese Complex Dioxide | 182442-95-1 | less than 30% |
| Lithium Manganese Dioxide (LiMn ₂ O ₄) | 12057-17-9 | less than 10% |
| Lithium Hexafluorophosphate (LiPF ₆) | 21324-40-38 | less than 3% |
| Ethylene Carbonate (C ₃ H ₄ O ₃) | 96-49-1 | less than 5% |
| Chain Carbonate (-) | - | less than 9% |
| Graphite (C) | 7782-42-5 | less than 20% |
| Lead (Pb) | | less than 0.004%(40ppm) |
| Cadmium (Cd) | | less than 0.002%(20ppm) |
| Mercury (Hg) | | less than 0.0005%(5ppm) |
| | | |



Section 4. First aid measures.

Lithium Batteries do not pose a risk to eyes or skin under normal circumstances.

In the case of contact with internal substances;

EYE CONTACT: irrigate eyes with water for at least 15 minutes while raising eyelid(s).
Seek medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush affected area(s) with copious amounts of water for at least 15 minutes. Seek medical attention.

INGESTION: If swallowed, do not induce vomiting. Give large amounts of water but *do not* do this if casualty is unconscious.

INHALATION: If breathing difficulties develop, remove the person to fresh air.
Loosen close fitting clothing.
Ensure that person is warm.
If breathing is difficult, give oxygen.
If mouth to mouth resuscitation is necessary, the person conducting this must take steps to reduce the risk of contamination from toxic / corrosive substances that may be present.

Protection of First Aiders:

Use personal protective equipment.
Avoid contact with skin, eyes and clothing.
Ensure that medical personnel are aware of the material(s) involved.
Ensure that medical personnel take precautions to protect themselves and prevent spread of contamination.



Section 5. Fire Fighting Measures.

Recommended practice; if a battery becomes hot, immediately remove it from flammable materials and place on a non-combustible surface. If possible, place a disintegrating device outdoors and allow it to burn out.

Fire condition; NB; ensure that electrical devices are turned off. Prevent electric shock risk.

In case of fire where lithium batteries are present, flood the area with water. Important; read Section 5.1.

If any batteries are burning, water may not extinguish them, but will cool the adjacent batteries and control the spread of fire.

5.1. Extinguishing media

Fragments may be ejected from a fire.

Extinguishers;

Only use Graphite based CO₂ (Carbon dioxide), Dry Powder or Foam.

Copper powder fire extinguishers, sand, dry ground dolomite or soda ash may also be used. These materials act as smothering agents.

If possible, use a **LITH-X (powdered graphite)** extinguisher on small fires. This material acts as a smothering agent. *A sodium chloride powder extinguisher IS NOT suitable for use on Lithium Batteries.*

It may not be possible to extinguish burning lithium batteries. Burning batteries will burn themselves out.

Do not use water with **LITH-X (powdered graphite)**.

- If a LITH-X (powdered graphite) extinguisher is not available;

Use copious amounts of water in a fine spray to swamp a fire.

Continue to use copious amounts of water until the fire is extinguished and the batteries are cooled.

NB: **Lithium reacts with water to form Hydrogen.** The fire will not be extinguished immediately.

Be aware of the increased risk of explosion.

NB; fire-fighting water runoff may be corrosive / toxic and may cause adverse environmental impact.

5.2. Special hazards arising from the substance or mixture

Hazard characteristics; thermal decomposition can lead to the release of toxic fumes.

Hazardous combustion products; carbon dioxide, carbon monoxide, lithium oxide fumes.

5.3. Advice for fire-fighters

Fire Fighters should wear self-contained breathing apparatus and appropriate Personal Protective Equipment.

Section 6. Accidental Release Measures.

In the event of battery rupture and leakage,

- ventilate the area.
- wear appropriate protective clothing (see Section 7) to prevent eye and skin contact and to prevent inhalation of vapours or fumes.
- remove sources of ignition.
- absorb released materials with inert absorbent (dry sand or soil).
- collect released materials into sealed plastic bag or container.

Prevent material from contaminating soil or entering sewers or waterways.

Do not dispose of released materials with domestic waste

Do not allow product to enter ground water, water course or sewerage system.

Dispose of released materials in accordance with local authority regulations.



Section 7. Handling and Storage.

Handling;

1. Never dismantle or modify a battery.
2. Do not immerse or expose a battery to water.
3. In the event of a battery becoming damaged and the battery contents are released, see section 8.
4. Do not short circuit a battery. A short circuit causes heating and can lead to ignition of surrounding materials. Physical contact with a short-circuited battery can cause skin burn. A short circuit will reduce the life of the battery.
5. To minimize the risk of a short circuit, always store batteries in an appropriate container to prevent contact with conductive materials.
6. Do not allow contact with water.
7. Do not remove the battery label.
8. Lithium batteries should be between 10% and 50% of full charge when being transported.
9. Batteries are designed to be recharged.

Improperly charging a battery may cause the battery to combust.

When charging the battery, use dedicated chargers and follow the specified conditions.

Batteries emit flammable gases during the charging process.

Ensure that the area is well ventilated and away from sources of ignition.

Do not eat, drink or smoke when handling batteries.

Storage;

1. Store battery (ies) away from heat, spark hazards, fire risk and open flames and other sources of ignition.
2. Store battery (ies) at room temperature (<30°C) and in a well ventilated and dry environment.
3. Do not store in direct sunlight.
4. Keep batteries away from children.
5. Do not eat, drink or smoke in battery storage area.



Section 8. Exposure Controls/Personal Protection.

Body protection;

Not necessary under conditions of normal use.

Use a protective rubber apron when handling a leaking or ruptured battery.

Use appropriate Personal Protection with long sleeves and long trousers.

Eye protection;

Not necessary under conditions of normal use.

Wear chemical grade full face shield should be worn if handling a leaking or ruptured battery.

Hand protection;

Not necessary under conditions of normal use.

Use chemical resistant, natural rubber or neoprene acid resistant gloves, with elbow length gauntlet, if handling a leaking or ruptured battery.

Respiratory protection;

Not necessary under conditions of normal use.

In case of a damaged battery, use acid gas filter mask or self-contained breathing apparatus.

Ventilation;

Not necessary under conditions of normal use.

In case of a damaged battery, provide adequate general and/or local exhaust ventilation to control airborne levels of battery gas and fumes.

Refer also to Section 4 and Section 5.



Section 9. Physical and Chemical Properties.

9.1. Information on basic physical and chemical properties

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|---|--|
| (a) Appearance: | Lithium Nickel Cobalt Complex Dioxide LiMn ₂ O ₄ and Graphite are black powder. |
| (b) Odour: | No data available. |
| (c) Odour threshold; | No data available. |
| (d) pH: | No data available. |
| (e) Melting point; | Lithium Nickel Cobalt Manganese Complex Dioxide (Above 1000°C) LiMn ₂ O ₄ (Above 1000°C) Ethylene Carbonate(38°C), Chain Carbonate(< 0°C) |
| (f) Boiling point ge; | Ethylene Carbonate(240°C), Chain Carbonate(100-130°C) |
| (g) Flash point; | Ethylene Carbonate(151°C), Chain Carbonate(21-33°C) |
| (h) Evaporation rate; | No data available. |
| (i) Flammability (solid, gas); | No data available. |
| (j) Upper/lower flammability or explosive limits; | No data available. |
| (k) Vapour pressure; | No data available. |
| (l) Vapour density; | No data available. |
| (m) Relative density; | No data available. |
| (n) Solubility(ies); | No data available. |
| (o) Partition coefficient: n-octanol/water; | No data available. |
| (p) Auto-ignition temperature; | No data available. |
| (q) Decomposition temperature; | No data available. |
| (r) Viscosity; | No data available. |
| (s) Explosive properties; | No data available. |
| (t) Oxidising properties. | No data available. |
| Specific gravity | Lithium Nickel Cobalt Complex Dioxide (4.7g/cm ³) LiMn ₂ O ₄ (4.2g/cm ³) , Graphite(2.1g/cm ³) |

Section 10. Stability and Reactivity.

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| 10.1. Reactivity | No data available. |
| 10.2. Chemical stability | Product is stable under storage conditions described in Section 7. |
| 10.3. Possibility of hazardous reactions | Hazardous polymerisation will not occur. |
| 10.4. Conditions to avoid | Do not heat above 100°C (212°F) Do not incinerate, or expose contents to water. |
| 10.5. Incompatible materials | No data available. |
| 10.6. Hazardous decomposition products | No data available. |



Section 11. Toxicological Information.

Potential health risks;

Eye; Contact with battery contents may cause severe irritation and burns. Eye damage is possible.

Skin; Contact with battery contents may cause severe irritation and burns.

Absorption through the skin will cause localized inflammation.

Ingestion; may cause severe and permanent damage to the digestive tract. May cause circulatory system failure.

Contents of an open battery can cause serious chemical burns to the mouth, oesophagus and gastrointestinal tract.

Inhalation; Inhalation of vapours or fumes released due to heat or leaking batteries may cause respiratory irritation. Irritation may lead to chemical pneumonitis.

Inhalation can produce chronic productive cough and shortness of breath.

| Components | ACGIH |
|--|---|
| Lithium Nickel Cobalt Manganese Complex Dioxide | 0.02mg/m ³ as Co 0.2mg/ m ³ as Ni 0.2mg/ m ³ as Mn |
| Lithium Manganese Dioxide (LiMn ₂ O ₄) | 0.2mg/m ³ as Mn |
| Lithium Hexafluorophosphate (LiPF ₆) | 2.5 mg/m ³ as F |
| Ethylene Carbonate (C ₃ H ₄ O ₃) | Not Established |
| Chain Carbonate (-) | Not Established |
| Graphite (C) | 2 mg/m ³ as dust |

Section 12. Ecological Information.

1. When properly used and disposed of correctly, the battery does not present environmental hazard.
2. Do not release internal components into water ways, wastewater or ground water.

Section 13. Disposal Considerations.

1. Disposal of the battery must be in accordance with local authority regulation requirements for hazardous waste treatment and hazardous waste transportation.
2. The battery should be completely discharged prior to disposal and the terminals taped or capped to prevent short circuit.
3. Do not dispose of batteries at landfill sites.
4. Do not incinerate batteries.



Section 14. Transport Information.

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|--|--|-----------------------------|
| 14.1. UN number | UN 3480 | |
| 14.2. UN proper shipping name | <u>ADR</u> : Lithium ion Batteries | |
| | Class | 9 |
| | Label | 9 |
| | Packaging Instructions | P903 P908 P909 LP903 LP904 |
| | Special provision | 188 230 310 310 376 377 636 |
| | <u>IATA</u> : Lithium ion batteries | |
| | Class. | 9 |
| | Hazard Label. | Miscellaneous |
| | Packaging Instructions | Passenger & Cargo 965 |
| | | Ltd Qty Forbidden |
| | | Cargo Only 965 |
| | | ERG Code 9F |
| | <u>IMDG</u> : Lithium metal batteries contained in equipment or Lithium metal batteries packed with equipment | |
| | Class. | 9 |
| | Packaging Instructions. | P903 |
| | Properties and observations. | |
| | Electrical batteries containing lithium encased in a rigid metallic body. Lithium batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants. | |
| 14.3. Transport hazard class(es) | ADR 9 | |
| | IATA | |
| | IMDG | |
| 14.4. Packing group | ADR; II | |
| | IATA; II | |
| | IMDG; II | |
| 14.5. Environmental hazards | | |
| 14.6. Special precautions for user | | |
| 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | IBC Code | Instructions Provisions - |

The battery must be securely packaged so as to prevent the possibility of short circuiting. -
 All Lithium batteries are class 9, Miscellaneous Dangerous Goods.



Section 15. Regulatory Information.

Air; IATA DGR Packing Instructions 965 – 970.
ICAO Technical Instructions for the safe transport of dangerous goods by air.
Road (Europe); ADR special provision 188.
Sea (Ferry); IMDG code special provision 188.

Shipping name (UN Number)

Lithium metal batteries (including lithium alloy batteries) (UN3090)
Lithium-Ion batteries contained in equipment (including lithium alloy batteries) (UN3091)
Lithium-ion batteries packed in equipment (including lithium alloy batteries) (UN3091)

IATA, ADR & IMDG

UN3090, packed in compliance with section 11 of PI968
UN3091, packed in compliance with section 11 of PI969
UN3091, packed in compliance with section 11 of PI970

Lithium-Ion batteries (including lithium polymer batteries) (UN3480)
Lithium-Ion batteries contained in equipment (including lithium polymer batteries) (UN3481)
Lithium-ion batteries packed in equipment (including lithium polymer batteries) (UN3481)

IATA, ADR & IMDG

UN3480, packed in compliance with section 11 of PI965
UN3481, packed in compliance with section 11 of P1966
UN3481, packed in compliance with section 11 of PI1967

ADR & IMDG – packed in compliance with P908 refers to UN no's 3090, 3091, 3480, 3841 and not restricted under Special Provision 188

Hazardous Classification Class 9 (Miscellaneous)

Section 16. Additional Information.

The above information is believed to be accurate and represents the best information currently available.

No warranty is expressed or implied by the above information.

We assume no liability resulting from use of the above information.

The end user should conduct their own investigations to determine the suitability of the above information for their particular purpose.