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

1.1. Product identifier

Lithium-Ionen-Batterie BP18, BP 12, BP-XS 12

Further trade names

TY-TPC --> 10756789 (3,7 V, 2400 mAh, 8,88 Wh)
TY-TSC --> 10756791 (3,7 V, 2400 mAh, 8,88 Wh)

Festool BP 18 Li 5,2/5,0 AS/ASI 5S2P (10017087, 10478869, 10651888, 10043561, 10479025, 10651878, 10723815)
BP 18 Li 4,0 HPC-AS/ASI (10220377, 10222681, 10570666)

BP-XS 2,6 Li/Li KR (10009271, 10479020, 10651909 ,203588, 10479021, 10652014),

BP 12 Li 2,5 C/US (10500436)

BP 18 Li 3,1 ERGO /KR (10018298, 204093)
BP 18 Li 3,1/3,0 ERGO-I EU/USA/OEM (10030310, 10723905)

BP 18 Li 3,1 CI /KR/USA (10043962)
BP 18 Li 3,1/3,0 C (10024683, 10737270)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Lithium-Ion battery < 100 Wh.

Uses advised against

For use as a battery-based power supply only. Do not rapture pr expose solution inside of the power cells.

1.3. Details of the supplier of the safety data sheet

Company name:	Festool GmbH	
Street:	Wertstraße 20	
Place:	D-73240 Wendlingen	
Telephone:	+49(0)7024 804 0	Telefax: +49 (0)7024 804 600
Internet:	www.festool.com	
Responsible Department:	Responsible for the safety data sheet: sds@gbk-ingelheim.de	

1.4. Emergency telephone number:

Public Poisons Information Line: +353 (0) 1 809 2166 (8am-10pm 7 days a week)
Emergency telephone :+49 (0) 6132 / 84463 (GBK GmbH, Ingelheim)

Further Information

Note: This product is an "article" and is not an object that is required to issue Safety Data Sheets (SDS) by regulations concerning chemical substances. This SDS voluntarily offers helpful information for your safe handling and environmental care.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

This mixture is not classified as hazardous in accordance with Regulation (EC) No 1272/2008.

The following information is required only in case of exposure to interior battery components after damage of the external battery casing.
Undamaged, closed batteries do not represent a danger to the health.

Note: This product is an "article" and is not an object that is required to issue Safety Data Sheets (SDS) by regulations concerning chemical substances. This SDS voluntarily offers helpful information for your safe handling and environmental care.

2.2. Label elements

Regulation (EC) No 1272/2008

Special labelling of certain mixtures

EUH210 Safety data sheet available on request.

Additional advice on labelling

There is no hazard when the measures for handling and storage are followed.

2.3. Other hazards

No hazards in case of an intact battery and observation of the instructions for use.

Heat development under short-circuit conditions.

In case of electrolyte leakage:
Causes severe irritation of eyes, skin and mucous membranes.
May cause respiratory irritation.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Lithium-Ion Battery: Mixture of the following substances

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
7440-50-8	Copper powder			%
	231-159-6		01-2119480154-42	
	Aquatic Acute 1, Aquatic Chronic 2; H400 H411			
623-53-0	ethyl methyl carbonate			%
	433-480-9		01-2119430547-39	
	Flam. Liq. 2; H225			
96-49-1	Ethylene carbonate			%
	202-510-0		01-2119540523-46	
	Acute Tox. 4, Eye Irrit. 2, STOT RE 2; H302 H319 H373			
12190-79-3	Lithium cobalt(III) oxide			%
	235-362-0			
	Carc. 2, Skin Sens. 1; H351 H317			
616-38-6	Dimethyl carbonate			%
	210-478-4			
	Flam. Liq. 2; H225			
1308-06-1	Tricobalt tetraoxide			%
	215-157-2		01-2119517310-56	
	Resp. Sens. 1, Aquatic Chronic 3; H334 H412			
21324-40-3	Lithium hexafluorophosphate			%
	244-334-7		01-2119383485-29	
	Acute Tox. 3, Skin Corr. 1A, Eye Dam. 1, STOT RE 1; H301 H314 H318 H372			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
96-49-1	202-510-0	Ethylene carbonate	%
	oral: ATE = 500 mg/kg		
21324-40-3	244-334-7	Lithium hexafluorophosphate	%
	oral: LD50 = 50 - 300 mg/kg		

Further Information

Because of the battery structure the dangerous ingredients will not be available if used properly.
Undamaged, closed batteries do not represent a danger to the health.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing.
Undamaged, closed batteries do not represent a danger to the health.

After inhalation

Ensure of fresh air.
Wash mouth and nasal passages with water.

Call a physician immediately.
Do not make mouth-to-mouth resuscitation.
If patient is not breathing, apply artificial respiration.

After contact with skin

Take off contaminated clothing and wash it before reuse.
Seek medical treatment immediately.

After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 30 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Seek medical treatment by eye specialist.

After ingestion

Rinse mouth.
Drink plenty of water or milk.
Never give anything by mouth to an unconscious person.
Do not induce vomiting.
Quickly transport victim to an emergency care facility

4.2. Most important symptoms and effects, both acute and delayed

In case of electrolyte leakage:
Causes severe irritation of eyes, skin and mucous membranes.
May cause respiratory irritation.
Coughing
Shortness of breath

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

Treat symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use in case of small fire: Water, Carbon dioxide (CO2), Dry powder, Sand.
Use in case of large fire: water spray jet, Alcohol-resistant foam.

Unsuitable extinguishing media

Not known.

5.2. Special hazards arising from the substance or mixture

During contact of electrolyte with water hydrofluoric acid can be formed.
Heat development under short-circuit conditions.
Fire may produce:
Smoke contains combustible, irritating/corrosive and toxic gases.

5.3. Advice for firefighters

Wear positive pressure self-contained breathing apparatus and protection suit.

Additional information

If possible, remove batteries from fire fighting area. If heated above 125°C, batteries can explode/vent.
Batteries is not flammable but internal organic material will burn if the batteries is incinerated.
Stand upwind of the fire while extinguishing
Collect contaminated water / firefighting water separately.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

The following information is required only in case of exposure to interior battery components after damage of

the external battery casing.
Undamaged, closed batteries do not represent a danger to the health.

Use personal protective clothing.
Avoid contact with skin, eyes and clothing.
Avoid breathing fume and gas.
Keep away noninvolved persons.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

Other information

Take up mechanically and send for disposal.
Waste disposal according to local regulations.

6.4. Reference to other sections

Informations for safe handling look up chapter 7.
Information for personal protective equipment look up section 8.
Informations for disposal look up chapter 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Follow the directions.
Avoid short circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble.
Do not throw into fire.
Handle in accordance with good industrial hygiene and safety practice.
At work do not eat, drink and smoke.
Wash hands and skin before breaks and after work.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.

Advice on general occupational hygiene

Handle in accordance with good industrial hygiene and safety practice.
When using do not eat, drink or smoke.
Wash hands and skin before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store only in original container at cool and aired place.
Protect from moisture.
Recommended storage temperature: - 20 °C - 45°C

Further information on storage conditions

Protect from heat and direct solar radiation.

7.3. Specific end use(s)

Lithium-Ion battery < 100 Wh
Note: This product is an "article".

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
7429-90-5	Aluminium metal (Respirable Fraction)	-	1		TWA (8 h)	
7440-50-8	Copper, dusts and mists	-	1		TWA (8 h)	
7782-42-5	Graphite (all forms except fibres) (Respirable Fraction)	-	2		TWA (8 h)	

Additional advice on limit values

During normal charging and discharging there is no release of product.
No hazards in case of an intact battery and observation of the instructions for use.

8.2. Exposure controls

Appropriate engineering controls

Ensure adequate ventilation.
Provide eye bath.
Provide emergency shower.

Individual protection measures, such as personal protective equipment

Eye/face protection

No special measures necessary if used correctly.
In case of electrolyte leakage: Safety goggles with side protection, Face shield

Hand protection

No special measures necessary if used correctly.
In case of electrolyte leakage: Wear suitable gloves

Skin protection

No special measures necessary if used correctly.
In case of electrolyte leakage: Protective suit. Chemical resistant apron (EN 467). Boots

Respiratory protection

No special measures necessary if used correctly.
If the occupational exposure limit is exceeded, suitable respiratory protection must be worn.
In case of electrolyte leakage: Wear respiratory protection.

Environmental exposure controls

No special measures necessary if used correctly.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Solid, Battery
Colour:	Black, White
Odour:	Odourless

Changes in the physical state

Melting point/freezing point:	n.a.
Boiling point or initial boiling point and boiling range:	n.a.
Sublimation point:	n.a.
Softening point:	n.a.
Flash point:	n.a.

Flammability

Solid/liquid:	n.a.
Lower explosion limits:	n.a.

Upper explosion limits:	n.a.
Auto-ignition temperature:	n.a.
Self-ignition temperature	
Solid:	n.a.
Gas:	n.a.
pH-Value:	n.a.
Viscosity / dynamic:	n.a.
Viscosity / kinematic:	n.a.
Flow time:	n.a.
Water solubility:	Insoluble

Solubility in other solvents

n.a.

Partition coefficient n-octanol/water:	n.a.
Vapour pressure:	n.a.
Density:	n.a.
Bulk density:	n.a.
Relative vapour density:	n.a.

9.2. Other information

Information with regard to physical hazard classes

Oxidizing properties

Not oxidising.

Other safety characteristics

Solvent separation test:	0 %
Solvent content:	0 %
Evaporation rate:	n.a.

Further Information

0,06 kAh / 8 kWh
0,04 kAh / 0,6 kWh

SECTION 10: Stability and reactivity

10.1. Reactivity

No uncommon reactivity known

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Short circuit
Overcharge
Incompatible materials
heat, sparks, open flames, hot surfaces
Avoid shock and impact.
Avoid high temperatures (80°C)
Protect against direct sun radiation.
Protect from atmospheric moisture and water.

10.5. Incompatible materials

Marine water, Water, strong oxidizing agents, Strong acid.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.
Heat development under short-circuit conditions.
Fire may produce: Toxic gases/vapours, Metallic oxides, Carbon monoxide (CO), Carbon dioxide (CO2).

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicocinetics, metabolism and distribution

No hazards in case of an intact battery and observation of the instructions for use.
Undamaged, closed batteries do not represent a danger to the health.

Acute toxicity

Based on available data, the classification criteria are not met.
There is no hazard when the measures for handling and storage are followed.

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

Other information

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

SECTION 12: Ecological information

12.1. Toxicity

There is no hazard when the measures for handling and storage are followed.

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
No data available

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

The following information is required only in case of exposure to interior battery components after damage of the external battery casing.
Harmful to the environment
Should not be released into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to local regulations.
Do not incinerate.

List of Wastes Code - residues/unused products

160605 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; batteries and accumulators; other batteries and accumulators

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 3480
14.2. UN proper shipping name:	LITHIUM ION BATTERIES
14.3. Transport hazard class(es):	9
14.4. Packing group:	-
Classification code:	M4
Special Provisions:	188 230 310 348 376 377 387 636
Limited quantity:	0
Excepted quantity:	E0
Transport category:	2
Tunnel restriction code:	E

Other applicable information (land transport)

Lithium-Ion battery < 100 Wh Special provision 188: Product is not subject to ADR/RID.

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 3480
14.2. UN proper shipping name:	LITHIUM ION BATTERIES
14.3. Transport hazard class(es):	9
14.4. Packing group:	-
Classification code:	M4
Special Provisions:	188 230 310 348 376 377 387 636
Limited quantity:	0
Excepted quantity:	E0

Other applicable information (inland waterways transport)

Lithium-Ion battery < 100 Wh Special provision 188: Product is not subject to ADN.

Marine transport (IMDG)

14.1. UN number or ID number:	UN 3480
14.2. UN proper shipping name:	LITHIUM ION BATTERIES
14.3. Transport hazard class(es):	9
14.4. Packing group:	-

Special Provisions:	188, 230, 310, 348, 376, 377, 384, 387
Limited quantity:	0
Excepted quantity:	E0
EmS:	F-A, S-I

Other applicable information (marine transport)

Lithium-Ion battery < 100 Wh Special provision 188: Product is not subject to IMDG Code.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 3480
14.2. UN proper shipping name:	LITHIUM ION BATTERIES
14.3. Transport hazard class(es):	9
14.4. Packing group:	-
Special Provisions:	A88 A99 A154 A164 A183 A201 A206 A213 A3
Limited quantity Passenger:	Forbidden
Passenger LQ:	Forbidden
Excepted quantity:	E0
IATA-packing instructions - Passenger:	Forbidden
IATA-max. quantity - Passenger:	Forbidden
IATA-packing instructions - Cargo:	See 965
IATA-max. quantity - Cargo:	See 965

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

To avoid risks to human health and the environment, comply with the instructions for use.

14.7. Maritime transport in bulk according to IMO instruments

The transport takes place only in approved and appropriate packaging.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 40, Entry 75

Additional information

No information available.

National regulatory information

Additional information

Note: This product is an "article" and is not an object that is required to issue Safety Data Sheets (SDS) by regulations concerning chemical substances. This SDS voluntarily offers helpful information for your safe handling and environmental care.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes

Changes in chapter: 1 10723815

Abbreviations and acronyms

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
IMDG = International Maritime Code for Dangerous Goods
IATA/ICAO = International Air Transport Association / International Civil Aviation Organization
MARPOL = International Convention for the Prevention of Pollution from Ships
IBC-Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk

GHS = Globally Harmonized System of Classification and Labelling of Chemicals
REACH = Registration, Evaluation, Authorization and Restriction of Chemicals
CAS = Chemical Abstract Service
EN = European norm
ISO = International Organization for Standardization
DIN = Deutsche Industrie Norm
PBT = Persistent Bioaccumulative and Toxic
vPvB = Very Persistent and very Bio-accumulative

LD = Lethal dose
LC = Lethal concentration
EC = Effect concentration
IC = Median immobilisation concentration or median inhibitory concentration

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH210	Safety data sheet available on request.

Further Information

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities. The information describes exclusively the safety requirements for the product (s) and is based on the present level of our knowledge. This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations. "(n.a. = not applicable; n.d. = not determined)"

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)