PROPOSAL

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

1.1. Product identifier

Product form : Article

Trade name/designation : Y5087828 Rechargeable Lithium Ion Battery Pack for use in Brady M511 Printer

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

1.2.1. Relevant identified uses

Intended for general public

Main use category : Consumer use
Professional use

Use of the substance/mixture : Lithium ion batteries

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

WH Brady nv
Poldergotestraat 9
9240 Zele
Belgium
T +32 52 45 78 11
regulatory_compliance_EMEA@bradycorp.com

1.4. Emergency telephone number

Country/Area	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

According to EC directives or the corresponding national regulations there is no labelling obligation for this product.
Not applicable.

2.3. Other hazards

Other hazards : The battery contains organic electrolyte. Further actions are required in case of electrolyte leakage from the battery.

The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Aluminium	CAS-No.: 7429-90-5 EC-No.: 231-072-3 EC Index-No.: 013-002-00-1		Not classified
Polyethylene	CAS-No.: 9002-88-4		Not classified
Polyethylene terephthalate	CAS-No.: 25038-59-9 EC-No.: - EC Index-No.: -		Not classified
Diethyl carbonate	CAS-No.: 105-58-8 EC-No.: 203-311-1		Flam. Liq. 3, H226
dimethyl carbonate	CAS-No.: 616-38-6 EC-No.: 210-478-4 EC Index-No.: 607-013-00-6		Flam. Liq. 2, H225
Ethylene carbonate	CAS-No.: 96-49-1 EC-No.: 202-510-0		Eye Irrit. 2, H319 STOT RE 2, H373
ethyl methyl carbonate	CAS-No.: 623-53-0 EC-No.: 433-480-9		Flam. Liq. 2, H225
Lithium hexafluorophosphate(1-)	CAS-No.: 21324-40-3 EC-No.: 244-334-7		Acute Tox. 3 (Oral), H301 (ATE=100 mg/kg bodyweight) Skin Corr. 1A, H314 STOT RE 1, H372
Propylene carbonate	CAS-No.: 108-32-7 EC-No.: 203-572-1 EC Index-No.: 607-194-00-1		Eye Irrit. 2, H319
Copper (Cu)	CAS-No.: 7440-50-8 EC-No.: 231-159-6 EC Index-No.: 029-026-00-0		Not classified

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Lithium Nickel Cobalt Aluminum Oxides	EC-No.: 442-750-5 EC Index-No.: 028-058-00-2		Carc. 1A, H350i Acute Tox. 2 (Inhalation), H330 (ATE=0,05 mg/l/4h) STOT RE 1, H372 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Nickel (base metal)	CAS-No.: 7440-02-0 EC-No.: 231-111-4 EC Index-No.: 028-002-00-7		Not classified
Carbon black	CAS-No.: 1333-86-4 EC-No.: 215-609-9 EC Index-No.: -		Not classified
carbon	CAS-No.: 7440-44-0 EC-No.: 231-153-3		Not classified
silicon	CAS-No.: 7440-21-3 EC-No.: 231-130-8;240-968-3		Not classified
iron	CAS-No.: 7439-89-6 EC-No.: 231-096-4		Not classified
sodium carboxy methyl cellulose	CAS-No.: 9004-32-4 EC-No.: 618-378-6		Not classified
Poly(vinylidene fluoride)	CAS-No.: 24937-79-9 EC-No.: 607-458-6		Not classified
Styrene butadiene rubber	CAS-No.: 9003-55-8 EC-No.: 618-370-2		Not classified

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

SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice : First aider: Pay attention to self-protection. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.

Inhalation : Remove casualty to fresh air and keep warm and at rest. In case of doubt or persistent symptoms, consult always a physician.

Skin contact : Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. In case of doubt or persistent symptoms, consult always a physician.

Eyes contact : Rinse immediately carefully and thoroughly with eye-bath or water. In case of doubt or persistent symptoms, consult always a physician.

Ingestion : Rinse mouth thoroughly with water. Get medical advice/attention.

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

Inhalation : The following symptoms may occur:

Skin contact : The following symptoms may occur:

Eyes contact : The following symptoms may occur:

Ingestion : The following symptoms may occur:

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Class L firefighting equipment. For large fire: Water.

5.2. Special hazards arising from the substance or mixture

Specific hazards : May explode in fire.

Hazardous decomposition products in case of fire : On contact with water: Hydrofluoric Acid. Hydrogen. Toxic gases. soot. Cobalt. Copper. lithium. Phosphorus. nickel. Metal oxides.

5.3. Advice for firefighters

Firefighting instructions : Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.

Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

For non-emergency personnel : Evacuate unnecessary personnel. Keep upwind. Provide adequate ventilation. Wear recommended personal protective equipment. Concerning personal protective equipment to use, see section 8. Do not breathe dust. Avoid contact with skin, eyes and clothing.

6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so. Dam up the solid spill. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Large spills: scoop solid spill into closing containers. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Do not breathe dust. Avoid contact with skin, eyes and clothing. Take any precaution to avoid mixing with Incompatible materials, Refer to Section 10 on Incompatible Materials. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Avoid release to the environment.

Hygiene measures : Keep good industrial hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothes. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Protect against water. Avoid shock and friction.

Storage conditions : Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Keep at temperatures below 60 °C.

Packaging materials : Do not pierce or burn, even after use.

Switzerland

Storage class (LK) : LK 11/13 - Solids

7.3. Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Aluminium (7429-90-5)	
Austria - Occupational Exposure Limits	
Local name	Aluminium (als Metall)
MAK (OEL TWA)	10 mg/m³ (inhalable fraction)
MAK (OEL STEL)	20 mg/m³ (inhalable fraction)

PROPOSAL

Aluminium (7429-90-5)	
Regulatory reference	BGBl. II Nr. 339/2025
Austria - Biological limit values	
Local name	Aluminium-haltige Stäube und Rauche
BLV	60 µg/g creatinine Parameter: Aluminium - Untersuchungsmaterial: Harn
Remark	Eignung mit vorzeitiger Folgeuntersuchung: Bei Überschreiten des Grenzwertes für Aluminium im Harn. Bei Vorliegen einer wesentlichen Beeinträchtigung der Lungenfunktion. Diese liegt vor, wenn nach mehrmaliger Messung der beste gemessene Wert den für den/die Untersuchte/n maßgebenden Sollwert um 20% unterschreitet, bzw. den MEF50-Sollwert um 50% unterschreitet. Eine vorzeitige Folgeuntersuchung ist jedoch nicht erforderlich, wenn im Vergleich zu Vorbefunden der altersabhängige physiologische Abfall der 1 Sekundenkapazität (FEV1) von 40 ml/Jahr nicht überschritten wird oder aus der Beurteilung des Kurvenverlaufes der Forcierten Vitalkapazität (FVC) eine eingeschränkte Mitarbeit des Untersuchten/der Untersuchten ersichtlich ist. Der Zeitabstand zwischen den Untersuchungen beträgt bei Eignung: ein Jahr; bei Eignung mit vorzeitiger Folgeuntersuchung: sechs Monate.
Regulatory reference	Verordnung über die Gesundheitsüberwachung am Arbeitsplatz 2024 (VGÜ)
Belgium - Occupational Exposure Limits	
Local name	Aluminium # Aluminium
OEL TWA	1 mg/m³
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	Алуминий
OEL TWA	10 mg/m³ (inhalable fraction) 1,5 mg/m³ (respirable fraction)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 28 от 2024 г., в сила от 05.04.2024 г.)
Croatia - Occupational Exposure Limits	
Local name	Aluminij
GVI (OEL TWA)	10 mg/m³ (total dust, inhalable particles) 4 mg/m³ (respirable dust)
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Croatia - Biological limit values	
Local name	Aluminij
BLV	200 µg/l Parameter: Aluminum - Medium: urine - Sampling time: at the end of the work shift

Aluminium (7429-90-5)	
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/2018)
Czech Republic - Occupational Exposure Limits	
Local name	Hliník a jeho oxidy (s výjimkoy gama Al2O3)
PEL (OEL TWA)	10 mg/m³ (dust)
Remark	Prachy s převážně nespecifickým účinkem.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Aluminium, pulver og støv
8-timers grænseværdi (OEL TWA)	5 mg/m³ (total, dust and powder) 2 mg/m³ (respirable, dust and powder)
Korttidsgrænseværdi (OEL STEL)	10 mg/m³ (total, dust and powder) 4 mg/m³ (respirable, dust and powder)
Regulatory reference	BEK nr 1356 af 19/11/2025
Estonia - Occupational Exposure Limits	
Local name	Alumiinium, metalliline ja oksiidid
OEL TWA	10 mg/m³ (total dust) 4 mg/m³ (respirable dust)
Remark	1 (Peentolm koosneb alla 2,5-mikromeetrise läbimõõduga osakestest, mis võivad koos sissehingatava õhuga jõuda kopsualveoolidesse)
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 02.04.2024, 13)
Finland - Occupational Exposure Limits	
HTP (OEL TWA)	1 mg/m³
France - Occupational Exposure Limits	
Local name	Aluminium
VLEP 8h (OEL TWA)	10 mg/m³ (metal) 5 mg/m³ (dust)
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 6443, 2022; Outil65)
Germany - Occupational Exposure Limits (TRGS 900)	
Occupational exposure limit value (mg/m³) (TRGS900)	10 mg/m³ (inhalable fraction (dust) 1,25 mg/m³ (respirable fraction (dust)
Germany - Biological limit values (TRGS 903)	
Local name	Aluminium
Biological limit value	50 µg/g creatinine Parameter: Aluminum - Medium: urine - Sampling time: at the end of the shift, in case of long-term exposure after several previous shifts

Aluminium (7429-90-5)	
Regulatory reference	TRGS 903
Greece - Occupational Exposure Limits	
OEL TWA	10 mg/m³ (inhalable fraction) 5 mg/m³ (respirable fraction)
Hungary - Occupational Exposure Limits	
Local name	ALUMINIUM (oldható, AL-ra számolva)
AK (OEL TWA)	1 mg/m³ (respirable fraction)
Remark	N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Hungary - Biological Exposure Indices	
Local name	Alumínium
BEI	0,25 µmol/mmol Creatinine Biológiai expozíciós (hatás) mutató: alumínium - Biológiai minta: vizeletben - Mintavétel ideje: n.k. (nem kritikus) 0,06 mg/g creatinine Biológiai expozíciós (hatás) mutató: alumínium - Biológiai minta: vizeletben - Mintavétel ideje: n.k. (nem kritikus)
Remark	A foglalkozási vegyi expozíció esetén ajánlott biológiai expozíciós és hatásmutatók határértékei
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Aluminium metal
OEL TWA	1 mg/m³ (respirable fraction)
OEL STEL	3 mg/m³ (calculated-respirable dust)
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2024
Latvia - Occupational Exposure Limits	
Local name	Alumīnijs un tā sakausējumi
OEL TWA	2 mg/m³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2024. gada 26. martā noteikumiem Nr. 191).
Latvia - Biological Exposure Indices	
Local name	Alumīnijs
BEI	50 µg/g creatinine Alumīnijam urīnā
Remark	Ilgstošas iedarbības novērtēšanai paraugus iegūst maiņas beigās pēc vairākām iepriekšējām maiņām.

Aluminium (7429-90-5)	
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2024. gada 26. martā noteikumiem Nr. 191).
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	5 mg/m³ (inhalable fraction) 2 mg/m³ (respirable fraction) 1 mg/m³
Poland - Occupational Exposure Limits	
Local name	Glin metaliczny, glin proszek (niestabilizowany)
NDS (OEL TWA)	2,5 mg/m³ (non-stabilized-inhalable fraction) 1,2 mg/m³ (non-stabilized-respirable fraction)
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która stwarza zagrożenie dla zdrowia po zdeponowaniu w drogach oddechowych. Frakcja respirabilna – frakcja aerozolu wnikająca do dróg oddechowych, która stwarza zagrożenie dla zdrowia po zdeponowaniu w obszarze wymiany gazowej.
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
Local name	Alumínio e compostos insolúveis, expresso em Al
OEL TWA	1 mg/m³ (metal-respirable fraction)
OEL chemical category	A4 - Not Classifiable as a Human Carcinogen
Remark	A4 (Agente não classificável como carcinogénico no Homem)
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
OEL TWA	3 mg/m³ (dust) 1 mg/m³ (fume)
OEL STEL	10 mg/m³ (dust) 3 mg/m³ (fume)
Romania - Biological limit values	
BLV	200 µg/l Parameter: Aluminum - Medium: urine - Sampling time: end of shift
Slovakia - Occupational Exposure Limits	
Local name	Hliník kovový
NPHV (OEL TWA)	4 mg/m³ (inhalable dust) 1,5 mg/m³ (respirable dust)
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (122/2024 Z. z.)
Slovakia - Biological limit values	
Local name	Hliník
BLV	60 µg/g creatinine Parameter: Aluminum - Medium: urine - Sampling time: not critical

Aluminium (7429-90-5)	
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (122/2024 Z. z.)
Slovenia - Biological limit values	
Local name	aluminij
BLV	50 µg/l Parameter: aluminij - Biološki vzorec: urin - Čas vzorčenja: pri dolgotrajni izpostavljenosti: ob koncu delovne izmene po več zaporednih delavnikih
Regulatory reference	Uradni list RS, št. 26/2025 z dne 18.4.2025 - Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu
Spain - Occupational Exposure Limits	
Local name	Aluminio
VLA-ED (OEL TWA)	1 mg/m³ (see UNE EN 481:1995 on workplace atmospheres-respirable fraction)
Remark	d (Véase UNE EN 481: Atmósferas en los puestos de trabajo. Definición de las fracciones por el tamaño de las partículas para la medición de aerosoles).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2026. INSHT
Sweden - Occupational Exposure Limits	
Local name	Aluminium – metall och oxid
NGV (OEL TWA)	5 mg/m³ (total dust) 2 mg/m³ (respirable fraction)
Remark	25 (Med inhalerbar och respirabel fraktion menas de dammfraktioner som definieras i svensk standard SS-EN 481, Arbetsplatsluft – Partikelstorleksfraktioner för mätning av luftburna partiklar (utgåva 1, 1993). Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i en totaldammprovtagare)
Regulatory reference	Arbetsmiljöverkets föreskrifter och allmänna råd (AFS 2023:14) om gränsvärden för luftvägsexponering i arbetsmiljön
United Kingdom - Occupational Exposure Limits	
Local name	Aluminium
WEL TWA (OEL TWA)	10 mg/m³ (inhalable dust) 4 mg/m³ (respirable dust)
WEL STEL (OEL STEL)	30 mg/m³ (calculated-inhalable dust) 12 mg/m³ (calculated-respirable dust)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Ál, duft og ryk, sjá einnig kerskálaryk
OEL TWA	5 mg/m³
OEL STEL	10 mg/m³

Aluminium (7429-90-5)	
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 1069/2018)
Norway - Occupational Exposure Limits	
Local name	Aluminiumpulver (pyroteknikk)
Grenseverdi (OEL TWA)	5 mg/m³ (pyrotechnical-powder)
Korttidsverdi (OEL STEL)	10 mg/m³ (pyrotechnical-powder)
Regulatory reference	FOR-2025-12-18-2660
Switzerland - Occupational Exposure Limits	
Local name	Aluminium métal / Aluminium (Metall)
MAK (OEL TWA)	3 mg/m³ (respirable dust) 3 mg/m³ (total dust limit values-respirable dust) 10 mg/m³ (total dust limit values-inhalable dust)
Notation	B / B
Remark	NIOSH
Regulatory reference	www.suva.ch, 01.01.2026
Switzerland - BAT	
Local name	Aluminium métal / Aluminium (Metall)
BAT	50 µg/g creatinine Parameter: Aluminum - Medium: urine - Sampling time: after several shifts (for long-term exposures) (metal) Parameter: Aluminum - Medium: urine - Sampling time: after several shifts (for long-term exposures) (metal)
Regulatory reference	Ordonnance 832.30 (OPA), article 50 al. 3, www.suva.ch/valeurs-limites / Verordnung 832.30 (VUV), Art. 50 Abs. 3, www.suva.ch/grenzwerte
USA - ACGIH® - Threshold Limit Values	
Local name	Aluminum, metal and insoluble compounds
ACGIH® TLV® TWA	1 mg/m³ (respirable particulate matter)
Remark (ACGIH®)	TLV® Basis: Pneumoconiosis; LRT irr; neurotoxicity. Notations: A4 (Not classifiable as a Human Carcinogen)
ACGIH® chemical category	Not Classifiable as a Human Carcinogen
Regulatory reference	ACGIH 2025

Polyethylene (9002-88-4)	
Czech Republic - Occupational Exposure Limits	
Local name	Prach polyethylenu
PEL (OEL TWA)	5 mg/m³
Remark	Prachy s převážně dráždivým účinkem.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)

Polyethylene (9002-88-4)	
Lithuania - Occupational Exposure Limits	
Local name	Polietilenas
IPRV (OEL TWA)	10 mg/m³
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)

Diethyl carbonate (105-58-8)	
Romania - Occupational Exposure Limits	
OEL TWA	700 mg/m³
	145 ppm
OEL STEL	1000 mg/m³
	207 ppm

Propylene carbonate (108-32-7)	
Germany - Occupational Exposure Limits (TRGS 900)	
Occupational exposure limit value (mg/m³) (TRGS900)	8,5 mg/m³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Occupational exposure limit value (ppm) (TRGS900)	2 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Latvia - Occupational Exposure Limits	
OEL TWA	2 mg/m³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	7 mg/m³
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	25,5 mg/m³
	6 ppm
KZGW (OEL STEL)	25,5 mg/m³
	6 ppm

Copper (Cu) (7440-50-8)	
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	1 mg/m³ (inhalable fraction) 0,1 mg/m³ (respirable fraction, smoke)
MAK (OEL STEL)	4 mg/m³ (inhalable fraction) 0,4 mg/m³ (respirable fraction, smoke)
Belgium - Occupational Exposure Limits	
OEL TWA	0,2 mg/m³ (fume) 1 mg/m³ (dust and fume)

Copper (Cu) (7440-50-8)	
Bulgaria - Occupational Exposure Limits	
OEL TWA	0,1 mg/m³ (metal vapor)
Croatia - Occupational Exposure Limits	
GVI (OEL TWA)	0,2 mg/m³ (fume) 1 mg/m³ (dust)
KGVI (OEL STEL)	2 mg/m³ (dust)
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	1 mg/m³ (dust) 0,1 mg/m³ (fume)
Denmark - Occupational Exposure Limits	
8-timers grænseværdi (OEL TWA)	1 mg/m³ (dust and powder) 0,1 mg/m³ (fume)
Korttidsgrænseværdi (OEL STEL)	2 mg/m³ (dust and powder) 0,2 mg/m³ (fume)
Estonia - Occupational Exposure Limits	
OEL TWA	1 mg/m³ (total dust) 0,2 mg/m³ (fine dust)
Finland - Occupational Exposure Limits	
HTP (OEL TWA)	0,02 mg/m³ (respirable dust)
France - Occupational Exposure Limits	
VLEP 8h (OEL TWA)	0,2 mg/m³ (fume) 1 mg/m³ (dust)
VLEP CT (OEL STEL)	2 mg/m³ (dust)
Germany - Occupational Exposure Limits (TRGS 900)	
Occupational exposure limit value (mg/m³) (TRGS900)	0,2 mg/m³ (inhalable fraction) 0,045 mg/m³ (respirable fraction)
Greece - Occupational Exposure Limits	
OEL TWA	0,2 mg/m³ (fume) 1 mg/m³ (dust)
OEL STEL	2 mg/m³ (dust)
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	0,1 mg/m³ 0,01 mg/m³ (fume; respirable fraction)
CK (OEL STEL)	0,2 mg/m³
Ireland - Occupational Exposure Limits	
OEL TWA	0,2 mg/m³ (fume) 1 mg/m³ (dusts and mists)

Copper (Cu) (7440-50-8)	
OEL STEL	2 mg/m³ (dusts and mists) 0,6 mg/m³ (calculated-fume)
Latvia - Occupational Exposure Limits	
OEL TWA	0,5 mg/m³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	1 mg/m³ (inhalable fraction) 0,2 mg/m³ (respirable fraction)
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	0,1 mg/m³ (inhalable)
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	0,2 mg/m³
Portugal - Occupational Exposure Limits	
OEL TWA	0,2 mg/m³ (fume) 1 mg/m³ (dust; mist)
Romania - Occupational Exposure Limits	
OEL TWA	0,5 mg/m³ (dust)
OEL STEL	0,2 mg/m³ (fume) 1,5 mg/m³ (dust)
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA)	1 mg/m³ (inhalable fraction) 0,2 mg/m³ (respirable fraction)
Spain - Occupational Exposure Limits	
VLA-ED (OEL TWA)	0,01 mg/m³ (see UNE EN 481:1995 on workplace atmospheres-respirable fraction)
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	0,01 mg/m³ (respirable fraction)
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA)	1 mg/m³ (dust and mist) 0,2 mg/m³ (fume)
WEL STEL (OEL STEL)	0,6 mg/m³ (calculated-fume) 2 mg/m³ (dust and mist)
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA)	0,1 mg/m³ (fume) 1 mg/m³ (dust)
Korttidsverdi (OEL STEL)	3 mg/m³ (value calculated-dust) 0,3 mg/m³ (value calculated-fume)
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	0,1 mg/m³ (inhalable dust)

Copper (Cu) (7440-50-8)	
KZGW (OEL STEL)	0,2 mg/m³ (inhalable dust)
USA - ACGIH® - Threshold Limit Values	
ACGIH® TLV® TWA	0,2 mg/m³ (fume)

Carbon black (1333-86-4)	
Belgium - Occupational Exposure Limits	
Local name	Carbone (noir de) # Koolzwart
OEL TWA	3 mg/m³
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Croatia - Occupational Exposure Limits	
Local name	Ugljik-crni
GVI (OEL TWA)	3,5 mg/m³
KGVI (OEL STEL)	7 mg/m³
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Czech Republic - Occupational Exposure Limits	
Local name	Amorfní uhlík (Carbon Black)
PEL (OEL TWA)	2 mg/m³ (dust)
Remark	Prachy s převážně nespecifickým účinkem.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Carbon black
8-timers grænseværdi (OEL TWA)	3,5 mg/m³
Korttidsgrænseværdi (OEL STEL)	7 mg/m³
Remark	K (betyder, at stoffet anses for at kunne være kræftfremkaldende og omfattet af bekendtgørelse om foranstaltninger til forebyggelse af risikoen ved arbejde med kræftfremkaldende, mutagene eller reproduktionstoksiske stoffer og materialer)
Regulatory reference	BEK nr 1356 af 19/11/2025
Estonia - Occupational Exposure Limits	
OEL TWA	3 mg/m³
Finland - Occupational Exposure Limits	
Local name	Nokimusta
HTP (OEL TWA)	3,5 mg/m³
HTP (OEL STEL)	7 mg/m³

Carbon black (1333-86-4)	
Regulatory reference	HTP-ARVOT 2025 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Noir de carbone
VLEP 8h (OEL TWA)	3,5 mg/m³
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 6443, 2022; Outil65)
Greece - Occupational Exposure Limits	
Local name	Αιθάλη
OEL TWA	3,5 mg/m³
OEL STEL	7 mg/m³
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Hungary - Occupational Exposure Limits	
Local name	Ipari korom [„Carbon Black”]
AK (OEL TWA)	3 mg/m³ (inhalable concentration (flying and fibrous powders)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Carbon black
OEL TWA	3 mg/m³ (inhalable fraction)
OEL STEL	15 mg/m³ (calculated-inhalable fraction)
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2024
Poland - Occupational Exposure Limits	
Local name	Sadza techniczna
NDS (OEL TWA)	4 mg/m³ (inhalable fraction)
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która stwarza zagrożenie dla zdrowia po zdeponowaniu w drogach oddechowych.
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
Local name	Carbono, preto (Negro de fumo)
OEL TWA	3 mg/m³ (inhalable fraction)
OEL chemical category	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Remark	A3 (Agente carcinogénico confirmado nos animais de laboratorio con relevância desconhecida no Homem)

Carbon black (1333-86-4)	
Regulatory reference	Norma Portuguesa NP 1796:2014
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA)	2 mg/m³ (respirable fraction, 5% or less fibrogenic component) 10 mg/m³ (respirable fraction, greater than 5% fibrogenic component) 10 mg/m³ (total aerosol)
NPHV (OEL C)	10 mg/m³ (details in source table-solid aerosol)
Spain - Occupational Exposure Limits	
Local name	Negro de humo
VLA-ED (OEL TWA)	3,5 mg/m³
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2026. INSHT
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	3 mg/m³ (inhalable fraction)
United Kingdom - Occupational Exposure Limits	
Local name	Carbon black
WEL TWA (OEL TWA)	3,5 mg/m³
WEL STEL (OEL STEL)	7 mg/m³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Kolefni
OEL TWA	3,5 mg/m³
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Carbon Black (lampesot)
Grenseverdi (OEL TWA)	3,5 mg/m³
Korttidsverdi (OEL STEL)	7 mg/m³ (value calculated)
Regulatory reference	FOR-2025-12-18-2660
USA - ACGIH® - Threshold Limit Values	
Local name	Carbon black
ACGIH® TLV® TWA	3 mg/m³ (inhalable particulate matter)
Remark (ACGIH®)	TLV® Basis: Bronchitis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
ACGIH® chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
Regulatory reference	ACGIH 2025

carbon (7440-44-0)	
Austria - Occupational Exposure Limits	
Local name	Graphit (Alveolarstaub mit < 1% Quarz)
MAK (OEL TWA)	5 mg/m³ (with <1% Quartz-alveolar dust, respirable fraction)
Regulatory reference	BGBl. II Nr. 156/2021
Poland - Occupational Exposure Limits	
Local name	Grafit syntetyczny
NDS (OEL TWA)	6 mg/m³ (regulated under Synthetic graphite-inhalable fraction)
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia.
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
United Kingdom - Occupational Exposure Limits	
Local name	Graphite
WEL TWA (OEL TWA)	4 mg/m³ respirable 10 mg/m³ inhalable dust
WEL STEL (OEL STEL)*	12 mg/m³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

silicon (7440-21-3)	
Belgium - Occupational Exposure Limits	
OEL TWA	10 mg/m³
Croatia - Occupational Exposure Limits	
GVI (OEL TWA)	10 mg/m³ (total dust, inhalable particles) 4 mg/m³ (respirable dust)
Denmark - Occupational Exposure Limits	
8-timers grænseværdi (OEL TWA)	10 mg/m³
Korttidsgrænseværdi (OEL STEL)	20 mg/m³
Estonia - Occupational Exposure Limits	
OEL TWA	10 mg/m³ 5 mg/m³ (respirable dust)
OEL chemical category	Carcinogenic substance respirable dust
France - Occupational Exposure Limits	
VLEP 8h (OEL TWA)	10 mg/m³
Greece - Occupational Exposure Limits	
OEL TWA	10 mg/m³ (inhalable fraction) 5 mg/m³ (respirable fraction)

silicon (7440-21-3)	
Ireland - Occupational Exposure Limits	
OEL TWA	4 mg/m³ (respirable dust) 10 mg/m³ (total inhalable dust)
OEL STEL	30 mg/m³ (calculated-respirable dust) 12 mg/m³ (calculated-total inhalable dust)
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA)	10 mg/m³ (inhalable fraction) 4 mg/m³ (respirable fraction)
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA)	10 mg/m³ (inhalable dust) 4 mg/m³ (respirable dust)
WEL STEL (OEL STEL)	12 mg/m³ (calculated-respirable dust)
	30 ppm (calculated-inhalable dust)
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA)	10 mg/m³ (set equal to the limit value for Nuisance dust)
Korttidsverdi (OEL STEL)	20 mg/m³ (set equal to the limit value for Nuisance dust)
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA)	3 mg/m³ (respirable dust)

iron (7439-89-6)	
Bulgaria - Occupational Exposure Limits	
OEL TWA	6 mg/m³ (containing <2% free Crystalline silicon dioxide in respirable fraction-dust, inhalable fraction (Iron dust)
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA)	4 mg/m³ (also alloys-inhalable fraction) 1,5 mg/m³ (also alloys-respirable fraction)

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Personal air monitoring. Room air monitoring.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Additional information : Recommended monitoring procedures :. Personal air monitoring. Room air monitoring

8.1.5. Control banding

No additional information available

8.2. Exposure controls

Engineering measure(s)	:	Provide adequate ventilation. Organisational measures to prevent/limit releases, dispersion and exposure. See Section 7 for information on safe handling.
Personal protective equipment	:	The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hand protection	:	Wear chemically resistant gloves (tested to EN374). Suitable material: The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Eye protection	:	Use suitable eye protection (EN ISO 16321-1:2022)
Body protection	:	Wear suitable protective clothing
Respiratory protection	:	Not required for normal conditions of use
Thermal hazard protection	:	Not required for normal conditions of use. Use dedicated equipment.
Environmental exposure controls	:	Avoid release to the environment. Comply with applicable Community environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	Not available
Odour	:	Not available
Odour threshold	:	No data available
Melting / freezing point	:	No data available
Freezing point	:	Not available
Initial boiling point and boiling range	:	No data available
Flammability	:	Not available
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH value	:	No data available
pH solution	:	Not available
Kinematic viscosity	:	No data available
Dynamic viscosity	:	No data available
Solubility	:	Water: No data available
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Partition coefficient n-octanol/water	:	No data available
Vapour pressure	:	No data available

Vapour pressure at 50°C	:	Not available
Density	:	Not available
Relative density	:	No data available
Vapour density	:	No data available
Particle size	:	Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable at ambient temperature and under normal conditions of use. Reference to other sections 10.4 & 10.5.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Do not puncture. See Section 7 for information on safe handling.

10.5. Incompatible materials

Strong acids. Strong oxidizing agents. See Section 7 for information on safe handling.

10.6. Hazardous decomposition products

No dangerous reaction known under conditions of normal use. This product may release the following: Hydrogen fluoride. Carbon oxides (CO, CO2). Copper oxides. metal oxides. Reference to other sections 5.2.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	:	Not classified (Based on available data, the classification criteria are not met)

Aluminium (7429-90-5)	
LC50/inhalation/4h/rat	> 0,888 mg/l/4h

Diethyl carbonate (105-58-8)	
LD50/oral/rat	> 15000 mg/kg (Source: ECHA)
LC50/inhalation/4h/rat	> 1268 mg/m³ (Exposure time: 7 h Source: ECHA)

dimethyl carbonate (616-38-6)	
LD50/oral/rat	> 6000 mg/kg ((small) Rat) ; >13000 mg/kg ((Large) Rat)
LD50/dermal/rabbit	> 5 g/kg (Source: NLM_CIP)
LC50/inhalation/4h/rat	> 5,36 mg/l/4h

Ethylene carbonate (96-49-1)	
LD50/oral/rat	10 g/kg (Source: NLM_CIP)
LD50/dermal/rabbit	> 26420 mg/kg (Source: ECHA_API)
LC50/inhalation/4h/rat	> 730 mg/m³ (Exposure time: 8 h Source: ECHA)

ethyl methyl carbonate (623-53-0)	
LD50/oral/rat	> 5000 mg/kg (Source: ECHA)
LC50/inhalation/4h/rat	> 17,6 mg/l/4h

Propylene carbonate (108-32-7)	
LD50/oral/rat	29000 mg/kg (Source: NLM_CIP)
LD50/dermal/rabbit	> 3000 mg/kg (Source: EPA_HPV)

Copper (Cu) (7440-50-8)	
LC50/inhalation/4h/rat	> 5,11 mg/l/4h

Carbon black (1333-86-4)	
LD50/oral/rat	> 8000 mg/kg
LD50/dermal/rabbit	3000 mg/kg
LC50/inhalation/4h/rat	> 4,6 mg/m³ (Exposure time: 4 h Source: ECHA_API)

carbon (7440-44-0)	
LD50/oral/rat	> 10000 mg/kg (Source: IUCLID)

silicon (7440-21-3)	
LD50/oral/rat	3160 mg/kg (Source: NLM_CIP)

iron (7439-89-6)	
LD50/oral/rat	30 g/kg (Source: NLM_CIP)

sodium carboxy methyl cellulose (9004-32-4)	
LD50/oral/rat	27000 mg/kg (Source: NLM_CIP)
LC50/inhalation/4h/rat	> 5800 mg/m³ (Exposure time: 4 hours ; Source: NLM_CIP)

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
pH value: No data available

Propylene carbonate (108-32-7)	
pH value	8,8

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
pH value: No data available

Propylene carbonate (108-32-7)	
pH value	8,8

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Carbon black (1333-86-4)	
IARC group	2B - Possibly carcinogenic to humans

Styrene butadiene rubber (9003-55-8)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Ethylene carbonate (96-49-1)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Lithium hexafluorophosphate(1-) (21324-40-3)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Lithium Nickel Cobalt Aluminum Oxides	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

Y5087828 Rechargeable Lithium Ion Battery Pack for use in Brady M511 Printer	
Kinematic viscosity	No data available

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

11.2.2. Other information

Other information : Symptoms related to the physical, chemical and toxicological characteristics,For further information see section 4

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Not classified

dimethyl carbonate (616-38-6)	
LC50 - Fish [1]	≥ 100 mg/l (Exposure time: 96 hours - Species: Brachydanio rerio (zebra-fish) [Flow-through system] Source: ECHA)

Ethylene carbonate (96-49-1)	
LC50 - Fish [1]	> 100 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss Source: ECHA)

ethyl methyl carbonate (623-53-0)	
LC50 - Fish [1]	> 100 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static] Source: ECHA)

Propylene carbonate (108-32-7)	
LC50 - Fish [1]	> 1000 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static] Source: IUCLID)
EC50 - Crustacea [1]	> 500 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	> 500 mg/l (Species: Desmodesmus subspicatus)

Copper (Cu) (7440-50-8)	
LC50 - Fish [1]	0,0068 – 0,0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas Source: EPA)
LC50 - Fish [2]	< 0,3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static] Source: EPA)
EC50 - Crustacea [1]	(Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 72h - Algae [1]	≤ 0,0535 mg/l (Species: Pseudokirchneriella subcapitata [static])
EC50 96h - Algae [1]	≤ 0,054 mg/l (Species: Pseudokirchneriella subcapitata [static])

12.2. Persistence and degradability

Y5087828 Rechargeable Lithium Ion Battery Pack for use in Brady M511 Printer	
Persistence and degradability	No additional information available.

12.3. Bioaccumulative potential

Y5087828 Rechargeable Lithium Ion Battery Pack for use in Brady M511 Printer	
Partition coefficient n-octanol/water	No data available
Bioaccumulative potential	No additional information available.

Diethyl carbonate (105-58-8)	
Partition coefficient n-octanol/water	1,33 (at 25 °C)

dimethyl carbonate (616-38-6)	
Partition coefficient n-octanol/water	0,354 (20 °C ; pH >6.5-<7.5)

Ethylene carbonate (96-49-1)	
Partition coefficient n-octanol/water	0,11 (at 20 °C (at pH >5.33-<5.79)

ethyl methyl carbonate (623-53-0)	
Partition coefficient n-octanol/water	0,972 (at 40 °C (at pH 6.8)

Propylene carbonate (108-32-7)	
Partition coefficient n-octanol/water	0,48 (at 25 °C)

12.4. Mobility in soil

Y5087828 Rechargeable Lithium Ion Battery Pack for use in Brady M511 Printer	
Mobility in soil	No data available

12.5. Results of PBT and vPvB assessment

Y5087828 Rechargeable Lithium Ion Battery Pack for use in Brady M511 Printer	
Results of PBT assessment	No data available

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

12.7. Other adverse effects

Other adverse effects : No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Avoid release to the environment. Dispose of empty containers and wastes safely. See Section 7 for information on safe handling. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations. Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations.

Additional information : Do not puncture or incinerate. Dispose of contaminated materials in accordance with current regulations.

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : The following Waste Codes are only suggestions:
MS-N13.00403950BIS - 16 06 05 - other batteries and accumulators (CH: 16 06 05 ds).
MS-N13.00030010 - Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
3480	3480	3480	3480	3480
14.2. UN proper shipping name				
LITHIUM ION BATTERIES	LITHIUM ION BATTERIES	Lithium ion batteries	LITHIUM ION BATTERIES	LITHIUM ION BATTERIES
Transport document description				
UN 3480 LITHIUM ION BATTERIES, 9, (E)	UN 3480 LITHIUM ION BATTERIES, 9	UN 3480 Lithium ion batteries, 9	UN 3480 LITHIUM ION BATTERIES, 9	UN 3480 LITHIUM ION BATTERIES, 9
14.3. Transport hazard class(es)				
9	9	9	9	9

PROPOSAL

ADR	IMDG	IATA	ADN	RID
				
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

Special precautions for user : This article meets UN Manual of Tests and Criteria, Part III, subsection 38.3. Test certificate can be obtained through xyz@bradycorp.com, Nominal energy: 27 Wh.
Battery pack voltage: 10,80 Volts
Battery weight: 146 grams
Equivalent Lithium Content (ELC): 1.98 gram/battery

- Overland transport

Classification code (ADR) : M4
Special provisions : 188, 230, 310, 348, 376, 377, 387, 636, 677
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
Transport category (ADR) : 2
Tunnel restriction code : E
EAC code : 2Y

- Transport by sea

Special provisions (IMDG) : 188, 230, 310, 348, 376, 377, 384, 387
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P903, P908, P909 , P910, P911, LP903, LP904, LP905, LP906
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-I
Stowage category (IMDG) : A
Stowage and handling (IMDG) : SW19
Properties and observations (IMDG) : Electrical batteries containing lithium ion may react (e.g. flame, heat, emission of toxic, corrosive or flammable gases or vapours) or disassemble due to damage, defects or short circuit.

- Air transport

Transport regulations (IATA) : Under IATA regulations, lithium-ion cells and batteries (UN3480) must be offered for transport at a state of charge not exceeding 30% of their rated capacity.

PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: See 965
CAO max net quantity (IATA)	: See 965
Special provisions (IATA)	: A88, A99, A154, A183, A201, A213, A331, A334, A802
ERG code (IATA)	: 12FZ

- Inland waterway transport

Classification code (ADN)	: M4
Special provisions (ADN)	: 188, 230, 310, 348, 376, 377, 387, 636, 677
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP
Number of blue cones/lights (ADN)	: 0

- Rail transport

Classification code (RID)	: M4
Special provisions (RID)	: 188, 230, 310, 348, _376, 377, 387, 636, 677
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P903, 908, 909, P910, P911, LP903, LP904, LP905, LP906
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE2
Hazard identification number (RID)	: 90

14.7. Maritime transport in bulk according to IMO instruments

Code: IBC : No data available.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	**Applicable on**	**Entry title or description**
27.	Nickel (base metal)	Nickel and its compounds
3(a)	Diethyl carbonate ; dimethyl carbonate ; ethyl methyl carbonate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F

EU restriction list (REACH Annex XVII)		
Reference code	**Applicable on**	**Entry title or description**
3(b)	Propylene carbonate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
40.	Diethyl carbonate	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.
65.	silicon	Inorganic ammonium salts

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items: Aluminium powder (7429-90-5), Nickel powder (7440-02-0).

Explosives Precursors Regulation (EU 2019/1148)

Contains substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (EC 273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Detergent Regulation (648/2004/EC): Labelling of contents

15.1.2. National regulations

France

Occupational diseases			
Code	Description		
RG 66	Occupational rhinitis and asthma		
Installations classées			
No ICPE	Désignation de la rubrique	Code Régime	Rayon
na	Not Applicable	na	na

Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG).
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).

Water hazard class (WGK) : WGK nwg, Non-hazardous to water (Not classified according to Regulation Governing Systems for Handling Substances Hazardous to Waters (AwSV)).

Major Accidents Ordinance (12. BImSchV) : Is not subject to the Major Accidents Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with it.
If an employee is pregnant or breastfeeding and the person in question uses or is exposed to this product at work, the employer must always carry out a risk assessment of the work. The assessment must both deal with the dangerousness of the impact and its strength and duration. The employer's decision that a pregnant or lactating woman can perform a specific work task must therefore be made in the context of her specific working conditions. See also WEA-Guideline A.1.8-7 on the working environment of pregnant and breastfeeding workers.

15.2. Chemical safety assessment

Not applicable.

For the following substances of this mixture a chemical safety assessment has been carried out
Aluminium

SECTION 16: Other information

Abbreviations and acronyms:

	ABM = Algemene beoordelingsmethodiek

	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	BTT = Breakthrough time (maximum wearing time)
	DMEL = Derived Minimal Effect level
	DNEL = Derived No Effect Level
	EC50 = Median Effective Concentration
	EL50 = Median effective level
	ErC50 = EC50 in terms of reduction of growth rate
	ErL50 = EL50 in terms of reduction of growth rate
	EWC = European waste catalogue
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	NA = Not applicable
	NOEC = No observed effect concentration
	NOEL: no-observed-effect level
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	N.O.S. = Not Otherwise Specified
	OEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	PNEC = Predicted No Effect Concentration
	Quantitative structure-activity relationship (QSAR)
	STOT = Specific Target Organ Toxicity
	TWA = time weighted average
	VOC = Volatile organic compounds
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the datasheet : MSDS supplier.

Training advice : Training staff on good practice.

Full text of H- and EUH-statements:

Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Carc. 1A	Carcinogenicity (inhalation) Category 1A
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A

PROPOSAL

Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H350i	May cause cancer by inhalation.
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.
H410	Very toxic to aquatic life with long lasting effects.

According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Labelling according to Regulation (EC) No. 1272/2008 [CLP]