# SDS SAFETY DATA SHEET

According to 2012 OSHA Hazard Communication Standard

(29 CFR 1910.1200)

- Prepared For : Deer Management Systems LLC 1668 Jordan West Rd, Decorah, IA 52101, United States
- Prepared By : Shenzhen LCS Compliance Testing Laboratory Ltd. Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China
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- Report Number : KA2411110219A3002

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(29 CFR 1910.1200)

Version: V1.8

REPORT NO.: KA2411110219A3001

* The SDS is prepared based client's request.	d on the information provided by client. The co	ntents and formats of this SDS are revised as per				
	Section 1- Identifi	cation				
(a) Product identifier						
Product name	Rechargeable Li-ion Battery					
(b) Other means of ident	ification					
Product description	Model: TBP-20 Nominal Voltage:3.6V Nominal capacity: 5200mAh Watt-hour: 18.72Wh Weight: 18.72Wh					
(c) Recommended use o	f the chemical and restrictions on use					
Recommended use	LITHIUM ION BATTERIES					
Uses advised against	No information available.					
(d) Details of the supplie	er of the safety data sheet					
Applicant Name	Deer Management Systems LLC					
Applicant Address	1668 Jordan West Rd, Decorah, IA 52101, United States					
Manufacture Company	Henan Great Power Energy Co.,Ltd					
Manufacture Address	Northwest Part,Junction of Zhongyuan Avenue and Huaihe Avenue, Zhumadian City, 463000 Henan,P.R.China					
Supplier Phone Number	+86-0396-2709555					
(e) Emergency telephone	e number					
1						
	Section 2- Hazards ide	entification				
1910.1200). This product	t is an article which is a sealed battery a	lazard Communication Standard (29 CFR and as such does not require an MSDS per the zards indicated are for a ruptured battery.				
Reproductive toxicity		Category 2				
Acute toxicity-Oral		Category 3				
Skin corrosion/ irritation		Category 1				
Specific target organ toxic	ity-repeated exposure	Category 1				
(b) GHS Label elements,	including precautionary statements					
Emergency Overview						

### Safety Data Sheet

According to 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

REPORT NO.: KA2411110219A3001 Signal word Danger **Hazard Statements** Suspected of damaging fertility or the unborn child Toxic if swallowed Causes severe skin burns and eye damage Cause damage to organs through prolonged or repeated exposure. Appearance: No information available Physical State: Solid Odor: No information available If medical advice is needed, have product containet or label at hand P101 P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash ... thoroughly after handling. P270 dust/fume/gas/mist/vapours/spray P280 Wear protective gloves/protective clothing/eye protection/face protection IF exposed or concerned: Get medical advice/ attention. IF SWALLOWED: Immediately call a POISON CENTER/doctor/\u2026. P308+P313 Specific treatment (see ... on this label). P301+P310 Rinse mouth. P321 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P330 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water P301+P330+P331 [or shower]. P303+P361+P353 Wash contaminated clothing before reuse. P363 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P304+P340 Immediately call a POISON P310 CENTER/doctor/\u2026 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if P314 present and easy to do. Continue rinsing. Get medical advice/attention if you feel unwell. P405 Store locked up. P501 Dispose of contents/container to ... (c) Hazards not otherwise classified (HNOC) Not applicable (d) Unknown Toxicity 32% of the mixture consists of ingredient(s) of unknown toxicity (e) Other information

According to 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

REPORT NO.: KA2411110219A3001

Very toxic to aquatic life with long lasting effects

#### (f) Interactions with Other Chemicals

No information available.

### Section 3- Composition/information on ingredients

Chemical Name	CAS Number	Weight (%)	Trade Secret
Lithium Cobalt Oxide (CoLiO <sub>2</sub> )	12190-79-3	40	*
Copper	7440-50-8	5	*
Graphite	7782-42-5	40	*
Phosphate(1-), hexafluoro-, lithium	21324-40-3	5	*
Aluminum foil	7429-90-5	10	*

"\*" The exact percentage (concentration) of composition has been withheld as a trade secret.

### **Section 4- First-aid measures**

#### Description of first aid measures

- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Immediately rinse with water.
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: If symptoms persist consult doctor.
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed

No further relevant information available.

### Section 5- Fire-fighting measures

#### (a) Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### (b) Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

- (c) Specific Hazards Arising from the Chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
- (d) Hazardous Combustion Products Carbon oxides.
- (e) Protective equipment and precautions for firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### Section 6- Accidental release measures

### Safety Data Sheet

According to 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

#### REPORT NO.: KA2411110219A3001

(a) Personal precautions, protective equipment and emergency procedures

If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate. Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed with sand, earth or other inert substance and contaminated area should be ventilated meantime.

#### (b) Environment precautions

Do not allow product to reach sewage system or any water source.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers surface or ground water.

#### (c) Methods and material for containment and cleaning up

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

### Section 7- Handling and storage

#### (a) Precautions for safe handling

#### Handling

Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

(b) Conditions for safe storage, including any incompatibilities

#### Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

#### **Incompatible Products**

Strong acids. Strong oxidizing agents. Strong bases

### Section 8- Exposure controls/personal protection

#### (a) Control parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Graphite 7782-42-5	TWA: 3 mg/m <sup>3</sup> inhalable fraction	TWA: 3.5 mg/m <sup>3</sup> (vacated) TWA: 3.5 mg/m <sup>3</sup>	IDLH: 1750 mg/m <sup>3</sup> TWA: 3.5 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> Graphite in presence of Polycyclic aromatic hydrocarbons PAH
Lithium Cobalt Oxide (CoLiO <sub>2</sub> ) 12190-79-3	TWA: 0.02 mg/m³	-	-
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA:2.5mg/m³ F	TWA:2.5mg/m <sup>3</sup> F TWA:2.5mg/m <sup>3</sup> dust (vacated)TWA:2.5mg/m <sup>3</sup>	
Copper 7440-50-8	TWA:0.2mg/m³ fume TWA:1mg/m³Cu dust and mist	TWA:0.1mg/m³fume TWA:1mg/m³dust and mist (vacated) TWA:0.1mg/m³Cu	IDLH:100mg/m³dust ,fume and mist TWA:1mg/m³dust and mist

	Ũ	(29 CFR 1	,	NO.: KA2411110219A3001				
			dust,fume,mist	TWA:0.1mg/m <sup>3</sup> fume				
Aluminum foil	TWA:1mg/m <sup>3</sup>	respirable fraction	TWA:15mg/m³ total dust	TWA:10mg/m³ total dust				
7429-90-5			TWA:5mg/m³respirable fraction	TWA:5mg/m³ respirable dust				
			(vacated)	duot				
			TWA:15mg/m³total dust (vacated) TWA:5mg/m³					
			respirable fraction(vacated)					
ACGIH TLV: American	Conference of Gover	nmental Industrial Hygier	TWA:5mg/m <sup>3</sup> AL Aluminum					
OSHA PEL: Occupation	nal Safety and Health	Administration - Permiss	ible Exposure Limits Immediately Dange					
Other Exposure Guidelines			Court of Appeals decision in AF tion 15 for national exposure co	-				
(b) Appropriate e	engineering con	trols						
Engineering Meas	Showers ures Eyewash	stations						
		n systems						
(c) Individual pro	otection measur	es, such as perso	nal protective equipment					
Eye/Face Protect		uired for consumer u ection shield.	red for consumer use. If there is a risk of contact:. Tight sealing safety goggles. ction shield.					
Skin and body Protection	None req protective							
Respiratory Protection			eeded under normal use conditic ienced, ventilation and evacuati					
Hygiene Measure	s or smoke reuse. Av protection Regular c before bre	when using this pro oid contact with skir Contaminated wor leaning of equipmer eaks and immediate	ood industrial hygiene and safety duct. Take off contaminated clot n, eyes or clothing. Wear suitable k clothing should not be allowed nt, work area and clothing is reco ly after handling the product. Fo nated protective equipment befo	hing and wash before gloves and eye/face l out of the workplace. ommended. Wash hands r environmental protection,				
	Section	9- Physical a	ind chemical proper	ties				
Form		Solid						
Color		Black						
Odor		Not Available						
рН		Not Available	Not Available					
Melting point/free	zing point	Not Available	Not Available					
Boiling Point and	Boiling range	Not Available						

(29 CFR 1910.1200)

REPORT NO .: KA2411110219A3001

	REPORT NO.: KA2411110219A3001
Flash Point	Not Available
Upper/lower flammability or explosive limits	Not Available
Vapor Pressure	Not Available
Vapor Density	Not Available
Relative density	Not Available
Solubility in Water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available
Evaporation rate	Not Available
Flammability (soil, gas)	Not Available
Viscosity	Not Available
Sect	ion 10- Stability and reactivity
Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heat.
Incompatible materials	Acids. Bases. Oxidizing agent.
Hazardous Decomposition Products	Carbon oxides.
Section	n 11 – Toxicological information
Product Information	Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:
Eye contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.

(29 CFR 1910.1200)

#### REPORT NO.: KA2411110219A3001

Ingestion		burns. (based digestive and and stomach decrease. Bro Swelling of the	on comp respirator with vomi wnish or e throat m	onents). Ing ry tracts. Ma ting and dia yellowish st nay cause s	gestion causes b ay cause severe Irrhea of dark bl tains may be se hortness of brea	ot available. Causes burns of the upper burning pain in the mouth ood. Blood pressure may en around the mouth. ath and choking. May wallowed and enters	
Component Informatio	n						
Chemical Name		Oral LD50		Derm	nal LD50	Inhalation LC50	
Graphite 7782-42-5		> 10000 mg/kg ( F	Rat )	> 3 g/k	g(Rabbit)	-	
Information on toxicolo	gical effects	6			I		
Symptoms		Erythema (sk Itching. Rashe		· ·	ause redness	and tearing of the eyes.	
Delayed and immediate	effects as v	vell as chronic	effects f	rom short a	and long-term	exposure	
Sensitization:	May cause se skin contact.	nsitizatio	n of suscept	tible persons. M	ay cause sensitization by		
Mutagenic Effects:	No information available.						
Carcinogenicity:	The table below indicates whether each agency has listed any ingredient as a carcinogen.						
Chemical Name	AC	GIH	IARC		NTP	OSHA	
Lithium Cobalt Oxide (CoLiO <sub>2</sub> ) 12190-79-3	,	43	Group 2B			X	
Graphite 7782-42-5	,	A3 Group 2B			X		
ACGIH (American Conference A3 - Animal Carcinogen IARC (International Agency of Group 2B - Possibly Carcinoge OSHA (Occupational Safety X - Present Reproductive Toxicity	<b>for Research on</b> enic to Humans	Cancer) ninistration of the l	US Departr		)		
STOT - single exposure	<u> </u>	No information available.					
		No information available.					
STOT - repeated exposure		Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).					
Chronic Toxicity	Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse liver effects.						
Target Organ Effects		Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Central Vascular System (CVS).Kidney. Liver. Liver. Cardiovascular system. Systemic Toxicity.					

(29 CFR 1910.1200)

		(29 CFR 19	10.1200)	REPORT	NO.: KA2411110219A3001			
Aspiration Ha	zard	No information available.						
Numerical me	asures of toxicity Pro	duct Information						
-	values are calculated	based on	ATEmix (o	oral):	12,905.00 mg/kg			
chapter 3.1 of	the GHS document		ATEmix	(dermal):	10,200.00 mg/kg (ATE)			
	Secti	on 12- Ecol	ogical	information				
Ecological To	xicity	Very toxic to aqua	atic life with	n long lasting effects				
Chemical name	Toxicity to Algae	Toxicity to F	ish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)			
Copper 7440-50-8 Graphite	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: $0.0068 - 0.0156$ mg/L (Pimephales promelas) 96h LC50: = $0.112$ mg/L (Poecilia reticulata) 96h LC50: = $0.3$ mg/L (Cyprinus carpio) 96h LC50: = $0.8$ mg/L (Cyprinus carpio) 96h LC50: = $1.25$ mg/L (Lepomis macrochirus) 96h LC50: = $0.052$ mg/L (Oncorhynchus mykiss) 96h LC50: = $0.2$ mg/L (Pimephales promelas) 96h LC50: < $0.3$ mg/L (Pimephales promelas)			48h EC50: = 0.03 mg/L 24h EC50: > 5600 mg/L			
7782-42-5					<b>J</b>			
Persistence a	nd Degradability	No information available.						
Bioaccumula	tion	No information available.						
Other adverse effects		No information available.						
	Sectio	on 13- Dispo	sal co	nsiderations				
Waste treatmo	ent methods							
Disposal metl	nods	regulations (40 C it is mixed with or chemical addition	FR 261). T otherwise s are made	his material could be comes in contact wi e to this material, or	aste according to Federal ecome a hazardous waste if th a hazardous waste, if if the material is processed			

local regulations for additional requirements.

or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or

(29 CFR 1910.1200)

REPORT NO.: KA2411110219A3001

Contaminated Packaging		Disposal should be in accordance with applicable regional, national and local laws and regulations.				
California Hazardous Waste Co This product contains one or mor		sted with the State of California as a hazardous waste.				
Chemical Nar	ne	California Hazardous Waste				
Lithium Cobalt Oxide 12190-79-3	· · ·	Toxic				
Copper 7440-50-8		Toxic				
Aluminum fo 7429-90-5		Ignitable powder				
Se	ection 14 – Trar	nsport information				
UN Number -DOT, IMDG, IATA	UN 3480 & UN 3481					
UN Proper shipping name -DOT, IMDG, IATA	Lithium ion Batteries (Including lithium ion polymer batteries) or ; Lithium ion Batteries contained in equipments (Including lithium ion polymer batteries) or; Lithium ion Batteries packed with equipment (Including lithium ion polymer batteries)					
Transport information	in accordance with UN The transportation of I Air Transport Associat 965, or Section II of P/ n for transportation), In me Dangerous Goods 9 CFR 173.185. Lithium batteries shipp equipment",or "Lithium as "Dangerous Goods	Battery (Sample Model: TBP-20) is tested and has passed I manual of Tests and Criteria, Part III, subsection 38.3. ithium cells and batteries is regulated by the International ion (According to Section IB of PACKING INSTRUCTION ACKING INSTRUCTION 966~967 of IATA DGR 66 <sup>th</sup> Editio international Civil Aviation Organization, International Mariti Code and the US Department of Transportation listed in 4 bed as "Lithium batteries", "Lithium batteries packed with in batteries contained in equipment" may not be classified " when shipped in accordance with "special provision A45 cial provision 188 of IMO-IMDG Code"				
Transport hazard class(es) -DOT, IMDG, IATA	9					
Environmental hazards	Yes(DOT)					
Marine pollutant	Symbol (fish and tree)					
Special precautions for user EMS Number	Warning: Miscellaneous dangerous substances and articles F-A,S-N					
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable					
DOT Remarks:	Special marking with t	he symbol (fish and tree)				
IMDG Limited quantities (LQ) Excepted quantities (EQ)	0 Code: E0 Not permitted as Exce	pted Quantity				

(29 CFR 1910.1200)

REPORT NO .: KA2411110219A3001

### Section 15- Regulatory information

				- 110	guia			nation		
(a) International	Inventorie	s								
TSCA	Com	plies.								
DSL	All c	omponen	ts are lis	sted eit	ther on	the DSL	or NDS	L.		
(b) US Federal R	egulation	s								
SARA 313	(SAF	Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the report requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.						t to the reporting Part 372.		
Chemical Name		CA	AS No			١	Neight-%	, D		313 – Threshold Values %
Lithium Cobalt Ox (CoLiO <sub>2</sub> )	ide	1219	90-79-3				15-40			0.1
Copper		744	0-50-8				3-7			1.0
Aluminum foil		742	29-90-5				7-13			1.0
SARA 311/312 Ha	zard Cate	gories								
Acute Health Haza	rd		No							
Chronic Health Ha	zard		No							
Fire Hazard			No							
Sudden release of	pressure h	nazard	No							
Reactive Hazard			No							
CWA (Clear				ants pi	uct contains the following substances which are regulated pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR					
Chemical Name		Reportat antities	ble	-	WA - Toxic CWA - Priority Pollutants Pollutants				C	WA - Hazardous Substances
Copper 7440-50-8					x x			х		
	RCLA		hazar Comp	rdous s pensat	aterial, as supplied, contains one or more substances regulated as a ous substance under the Comprehensive Environmental Response insation and Liability Act (CERCLA) (40 CFR 302)					
Chemical N	lame	Haz	ardous S RC		ances Extremely Hazardous Substances RQs					RQ
Coppe 7440-50			500	00 lb	RQ 5000 lb final R0 RQ 2270 kg final R0					
(c) US State Reg	ulations									
California Propos	ition 65				This pro	oduct co	ontains th	ne following P	ropositi	on 65 chemicals.
C	hemical na	ame			California Proposition 65					
Gra	ohite – 778	2-42-5						Carcinoger	ו	
U.S. State Right-t	o-Know R	egulatior	าร					-		
Chemical Name	New	/ Jersey	Massa	chuse	tts	Pennsyl	Ivania Rhode Isl		land	Illinois
Graphite 7782-42-5		х		х		х				x
Lithium Cobalt Ox (CoLiO <sub>2</sub> ) 12190-79-3	ide	х				х		x		x
Aluminum 7429-90-5		х		х		х		x		
Copper 7440-50-8		x		х		х		x		x

(29 CFR 1910.1200)

Version: V1.8

REPORT NO.: KA2411110219A3001

(d) Inter	national Regulation	าร							
Mexico									
National	occupational expos	sure lim	its						
	Component		Carcin	logen	Status		Exposure Limits		
7	Graphite 782-42-5(15 - 40)						Mexico: TWA=3.5 mg/m <sup>3</sup>		
	Aluminum 7429-90-5(7-13)						Mexico: TWA= 10 mg/m <sup>3</sup>		
	Copper						Mexico: TWA= 1 mg/m <sup>3</sup>		
	7440-50-8 (3 - 7)						Mexico: TWA= 0.2 mg/m <sup>3</sup>		
							Mexico: STEL= 2 mg/m <sup>3</sup>		
Mexico - O	ccupational Exposure Limi	ts - Carcir	nogens						
Canada									
WHMIS I	Hazard Class		Not determined						
		S	ection 16-	Oth	er informat	ion			
NFPA	Health Hazards	1	Flammability	0	Instability	0	Physical and Chemical Hazards	-	
HMIS	Health Hazards	2*	Flammability	Flammability 0 Physical Hazard 0 Personal Protection >					
Chronic I	Hazard Star Legend *	= Chro	nic Health Hazar	ď					
the date storage, informati	mation provided in th of its publication. The transportation, dispos	informa sal and ne spec	ation given is des release and is r cific material des	signeo not to signat	l only as a guida be considered a ed and may no	ince fo a warra ot be '	wledge, information and bel r safe handling, use, proces anty or quality specification valid for such material use	sing, . The	

\*\*\*\*\*\*\*End of Safety Data Sheet\*\*\*\*\*\*