



1 IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1. Product identification

Product name : BATTERY LITHIUM POLYMER

Product code : LV 2000

The battery is a PRODUCT in the sense of REACH.

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

Rechargeable Lithium-Ion accumulators.

1.3. Details of the supplier of the safety data sheet Registered office:

Shada BV address : Kanaal Noord 350, 7323 AM Apeldoorn

Phone : 055-576 16 93

Email : info@shada.nl

Web : http://www.shada.nl

1.4. Emergency telephone number: 112.

Society / Institution : European emergency number.

2 IDENTIFICATION OF THE HAZARDS

2.1. Classification of the substance or mixture According to the regulation (EC) no. 1272/2008 and the modifications to it.

Substance which, in contact with water, emits flammable gases, category 2 (Water React. 2, H261).

Acute dermal toxicity, Category 4 (Acute Tox.4, H312).

Skin corrosion, Category 1B (Skin Corr. 1B, H314).

Skin sensitization, Category 1 (Skin Sens. 1, H317).

Reacts violently with water (EUH014).

This mixture does not pose a threat to the environment. No environmental degradation is known or foreseeable under normal conditions of use.

Complies with directives 67/548 / EEC, 1999/45 / EC and the modifications to them.

Acute toxicity on contact with the skin: harmful (Xn, R 21).

Corrosive (C, R 34).

Skin sensitization (Xi, R 43).

This mixture does not pose a threat to the environment. No environmental degradation is known or foreseeable under normal conditions of use.

2.2. Label elements According to the regulations (EC) no. 1272/2008 and the modifications to them.

Hazard pictograms:



Safety Data Sheet



Veiligheidsinformatieblad volgens 1907/2006/EG, Artikel 31 / ISO 11014

Signal word:

DANGER

Product identifiers:

LITHIUM TRANSITION METAL OXIDATE

Hazard designations:

- H261 : In contact with water, flammable gases are released.
- H312 : Harmful in contact with skin.
- H314 : Causes severe skin burns and eye damage.
- H317 : May cause an allergic skin reaction.
- EUH014 : Reacts violently with water.

General precautions:

- P101 : When collecting medical advice, keep the packaging or the label at your disposal.
- P102 : Keep out of the reach of children.
- P103 : Read the label before use.

Precautions regarding. Prevention:

- P223 : Avoid contact with water due to a violent reaction and possible cloud fire.
- P260 : Do not breathe vapor.
- P264 : Wash hands thoroughly after handling.
- P280 : Wear protective gloves / protective clothing / eye protection / face protection.

Precautions regarding. Reaction:

- P301 + P330 + P331: IF SWALLOWED "rinse mouth", Do NOT induce vomiting.
- P303 + P361 + P353: IF ON SKIN (or hair) "Take off immediately all contaminated clothing. Rinse skin with water / Shower".
- P304 + P340 : IF INHALED "Remove victim to fresh air and keep at rest in a position comfortable for Breathing".
- P305 + P351 + P338: IF IN EYES "Rinse cautiously with water for several minutes. remove contact lenses, if possible; keep rinsing"
- P312 : Call a POISON CENTER or doctor / physician if you feel unwell.
- P333 + P313 : In case of skin irritation or rash "consult a doctor".
- P335 + P334 : Wipe off loose particles from the skin. Submerge in cold water / apply wet dressing.
- P363 : Wash contaminated clothing before re-use.
- P370 + P378 : In case of fire "extinguish with [redacted]"

Precautions regarding. Storage:

- P402 + P404: Store in a dry place. Keep in closed packaging.

Precautions regarding Removal :

- P501: Dispose of contents / container to a treatment center that complies with local regulations.



2.3. Other hazards

The mixture does not contain "Substances of particular concern" (SVHC) published by the European Chemicals Agency (ECHA) according to Article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The substance does not meet the criteria for PBT or vPvB mixtures, according to Annex XIII of the REACH Regulation (EC) No. 1907/2006. THE BATTERY IS A PRODUCT CONTAINING A MIXTURE (ELECTROLYTE) CONTAINING (definition from REACH). THE ELECTROLYT IS CONSUMED DURING THE USE PHASE OF THE PRODUCT AND IS NOT DISPOSED (except for breakage of the item). THE ABOVE LABELING IS THEREFORE PROVIDED FOR INFORMATION ON BREAKING OF THE PRODUCT and must not be placed on the item. Rechargeable Lithium-Ion accumulators as described in this SDS are leak-tight products that are not hazardous when used according to the manufacturer's recommendations. Kidney short-circuit, pierce, burn, crush, submerge, force-discharge or expose to temperatures higher than the operating temperatures declared for the products. Risk of fire or explosion.

3 COMPOSITION / INFORMATION ABOUT THE INGREDIENTS

3.2. Mixtures

Composition :

Identificatie	(EC) 1272/2008	67/548/EEC	Opmerking	%
LITHIUM TRANSITION METAL OXIDATE	GHS06, GHS05 Dgr Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Corr. 1B, H314 Skin Sens. 1, H317 EUH:014	T T;R24 C;R34 Xn;R22 Xi;R43 R14		20 <= x % < 60
CAS: 7440-44-0 EC: 231-153-37440_44_0			1	10 <= x % < 30
CAS: 7440-50-8 EC: 231-159-6 REACH: 17-2119429821-407440_50_8				1 <= x % < 15
ELECTROLYTE ORGANIQUE (CONTENANT PRINCIPALEMENT DES ESTERS DE CARBONATE)				5 <= x % < 25
INDEX: 013-002-00-1 CAS: 7429-90-5 EC: 231-072-3ALUMINIUMPOEDER (GESTABILISEERD)	GHS02 Dgr Water-react. 2, H261 Flam. Sol. 1, H228	F F;R11 R15	T [1]	1 <= x % < 10
ALUMINUM, IRON, ALUMINUM LAMINATED PLASTIC (OUTER CASE)				1 <= x % < 30

Information about the ingredients:

[1] Substance for which exposure limit values exist in the workplace.

Other data:

Each accumulator consists of a leakproof metal container with chemical products and components, some of which could be dangerous in the event of leaks. There is no risk of exposure to these batteries, except in the event of loss of leakage of the electrochemical components, exposure to excessive temperatures or accidental application of excessive electrical or mechanical pressure.



4 FIRST AID MEASURES

In general, in case of doubt or if the symptoms persist, always warn a doctor. NEVER let anything be swallowed by an unconscious person.

4.1. Beschrijving van de eerste hulp maatregelen

Bij breuk of openen van een accumulator moeten personen uit de vervuilde zone geëvacueerd worden en een maximale ventilatie worden verzorgd om de bijtende gassen, rook en onaangename geuren te elimineren. Indien dit soort incident zich voordoet moet u de volgende instructies respecteren:

4.1. Description of first aid measures

In the event of breakage or opening of an accumulator, people must be evacuated from the contaminated zone and maximum ventilation must be provided to eliminate the corrosive gases, smoke and unpleasant odors. If this kind of incident occurs you must respect the following instructions:

In the event of splashes or contact with the eyes:

Abundant cleaning with clean and soft water for 15 minutes while the eyelids are open. Whatever the original situation, bring the person to an ophthalmologist systematically, showing the label to the latter. If pain, redness spots or facial problems occur, consult an ophthalmologist.

In the event of splashes or contact with the skin:

Wash the skin immediately with soap and water. Remove the contaminated clothing including the shoes, only put them back after cleaning. Seek medical advice if the irritation persists. Remove contaminated or splashed clothing immediately. Note residues of product that may be between the skin and clothing, watch, shoes ... Consult a doctor if an allergic reaction occurs. In case of contamination of large skin surfaces and / or when skin lesions appear, it is necessary to consult a doctor or have the person transferred to a hospital or clinic.

In the event of ingestion by mouth:

Do not let anything take via the mouth. After swallowing small amounts (no more than a swallow), rinse the mouth with water and consult a doctor. Keep calm. Do not induce vomiting. Immediately consult a doctor and show him the label. In case of accidental ingestion, consult a doctor to decide on a monitoring and a later treatment in a hospital, if necessary. Show the label.

4.2. Most important acute and delayed symptoms and effects

No data available.

4.3. Indication of the immediate medical attention and special treatment required

No data available

5 FIRE FIGHTING MEASURES

Flammable

5.1. Extinguishing media

In case of fire, use specially adapted extinguishing agents. Never use water. Cool packaging in the vicinity of the flames.

Suitable fire extinguishers.

In case of fire, use: - water - carbon dioxide (CO₂) - foam Prevent the extinguishing liquids from fire fighting from ending up in the sewers or watercourses.

Unsuitable fire extinguishers.

In case of fire, do not use: - water - water spray



5.2. Special hazards arising from the substance or mixture

A fire often produces a black thick smoke. Exposure to the degradation products may involve risks to health. Do not breathe the smoke. In case of fire, the following may form: - carbon monoxide (CO) - carbon dioxide (CO₂) - hydrogen fluoride (HF)

5.3. Advice for firefighters

If the gases released during the thermal decomposition of the product are toxic, the intervention group must be equipped with isolating autonomous devices to protect respiration

6 ACCIDENTAL RELEASE MEASURES ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the protective measures listed in sections 7 and 8. For non-first-aiders Avoid any contact with skin and eyes. For first aiders: The intervening persons must be equipped with suitable personal protective equipment (see section 8).

6.2. Environmental precautions

The spilled product with fire-resistant absorbent materials; for example: sand, earth, vermiculite and diatomaceous earth, contain and collect in barrels with a view to the elimination of waste. Avoid dripping into the sewers and watercourses.

6.3. Methods and material for containment and cleaning up

Connect the leaking batteries and the contaminated absorbent material hermetically in a plastic bag and dispose of them as special waste according to local regulations.

6.4. Reference to other sections

No data available.

7 HANDLING AND STORAGE

The regulations regarding the storage areas apply to the workshops where the mixture is processed. Persons with a history of skin hypersensitivity should under no circumstances work with this mixture.

7.1. Precautions for safe handling of the substance or mixture

Wash hands after each use. Remove contaminated clothing and wash before reuse. Safety showers and eye showers provide workplaces where the mixture is continuously processed. Do not crush, pierce or short-circuit the poles (+ and -) of the batteries with conductive products (eg metal), this would cause overheating. Do not heat or weld directly. Do not throw the batteries into a fire. Do not mix batteries of different types or brands. Do not mix new batteries with used batteries. Store the batteries in non-conductive containers (eg plastic). Do not disassemble, damage or mechanically destroy accumulators and accumulators.

Preventing fire:

Use in well-ventilated areas. Deny access to unauthorized persons.

Recommended equipment and procedures:

See item 8 for personal protective equipment. Follow the precautionary measures indicated on the label and the regulations of A.R.A.B. Never pour water into this mixture. Do not breathe dust. The opened packages must be carefully re-closed and stored in a vertical position.


Verboden uitrustingen en procedures:

Het is verboden te roken, drinken of eten in ruimtes waar het mengsel wordt gebruikt.

Prohibited equipment and procedures:

It is forbidden to smoke, drink or eat in rooms where the mixture is used.

7.2. Conditions for safe storage, including incompatible products

No data available.

Storage

Keep out of reach of children. Keep container tightly closed and in a dry and well-ventilated place. Keep an appropriate open space between the walls and the batteries. A temperature above 70 ° C may cause leakage and breakage of the batteries. Store the batteries in their original packaging until they are used and do not mix them, as a short circuit can cause fire, leakage or breakage.

Packaging

Always keep in packages of the same material as the original material.

7.3. Specific end use

Respect the recommendations of the producers regarding the maximum recommended flow and the operating temperatures. Applying pressure that can deform the battery can lead to breakage and irritation of the eyes, skin and throat. Do not immerse the batteries in water.

8 MAATREGELEN TER BEHEERSING VAN BLOOTSTELLING / PERSOONLIJKE BESCHERMING
8.1. Control parameters

Occupational exposure limits :

– *Belgium (Decreet van 19/05/2009, 2010)*

CAS	TWA	STEL	Ceiling	Definitie	Criteria
7440-44-0	2 f/cc	–	–	–	–
7440-50-8	1 mg/m ³	–	–	–	–
7429-90-5	10 mg/m ³	–	–	–	–

– *France (INRS – ED984 :2008) :*

CAS	VME-ppm	VME-mg/m ³	VLE-ppm	VLE-mg/m ³	Notes	TMP N°
7429-90-5	–	10	–	–	–	–

– *Netherlands / MAC-value (SER, 4 mei 2010) :*

CAS	TWA	STEL	Ceiling	Definitie	Criteria
7440-50-8	0.2 mg/m ³	–	–	–	–
7429-90-5	10 mg/m ³	–	–	–	–



8.2. Measures to control exposure

Personal protection measures, such as personal protective equipment

Pictogram (s) for the obligation to wear personal protective equipment (PPE):



Use clean and correctly maintained personal protective equipment. Store the personal protective equipment in a clean room, outside the work area. Do not eat, drink or smoke during use. Remove contaminated clothing and wash before reuse. Ensure good ventilation, especially in closed rooms.

Eye / face protection

Avoid contact with eyes. For the handling of powder or dust emissions an integral glasses must be set up that complies with the standard EN166. Wearing corrective glasses does not constitute protection. Provide eye showers in workshops where the mixture is continuously processed.

Hand protection.

Use suitable protective gloves that are resistant to chemicals and comply with the EN374 standard. The gloves must be chosen according to the application and the period of use at the workplace. The protective gloves must be selected according to the workplace: other chemical products that can be used, necessary physical protection (cutting, pricking, thermal protection), agility required. Recommended type of gloves: - Butyl rubber (Copolymer isobutylene-isoprene) Recommended features: - Waterproof gloves in accordance with standard EN374

Body protection

Avoid contact with the skin. Wear appropriate work clothing. Suitable type of protective clothing: Wear protective clothing against chemical risks to solids, particles suspended in the air (type 5) according to standard EN13982-1 to prevent any contact with the skin. Wear appropriate protective clothing, especially an apron and boots. This clothing must be kept in good condition and cleaned after use. The staff must regularly wear washed work clothing. After contact with the product all contaminated body parts must be washed. Protect yourself against electrolyte leaks.

Respiratory protection

Avoid dust inhalation. Type of FFP mask: Wear a half-face filter mask against single-use dust according to the EN149 standard. Class: - FFP1 Filter (s) against gas and vapors (combined filters) according to standard EN14387: - A1 (Brown)



9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information about basic physical and chemical properties

General information :

Fysieke staat:	Vast
Geur:	Geurloos (behalve indien het product beschadigd is en elektrolyt lekt).
-	Accu's in prismatische of ronde vorm.

Important information regarding health, safety and the environment:

Ph:	Niet van toepassing
Vlampuntinterval:	Niet van toepassing
Dampspanning (50°C)	lager dan 110kPa (1,10 bar)
Soortelijk gewicht :	> 1
Oplosbaarheid in water :	Onoplosbaar.

9.2. Other information

No data available.

10 STABILITY and REACTIVITY

10.1. Reactivity

This mixture reacts violently on contact with water.

10.2. Chemical stability

This mixture is stable under the conditions recommended for processing and storage under section 7.

10.3. Possible hazardous reactions

If the mixture is exposed to high temperatures, it can emit hazardous decomposition products, such as carbon monoxide, carbon dioxide, smoke, nitrogen oxide.

10.4. Conditions to avoid

Avoid: - humidity - heat

Protect from moisture. The reaction with water can cause an exothermic reaction.

10.5. Incompatible materials

Keep out of reach of: - water - strong acids - caustic soda - oxidants

Reacts violently when in contact with water.

10.6. Hazardous decomposition products

The thermal decomposition can develop / form: - carbon monoxide (CO) - carbon dioxide (CO₂) - hydrogen fluoride (HF)

**11 TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects**

Exposure to the vapors of solvents above the stated exposure limit may have adverse health effects, such as irritation of the mucous membranes and the respiratory system, damage to the kidneys, the liver and the central nervous system. The symptoms will occur in the form of headache, dizziness, black-out, fatigue, muscle weakness and in the extreme cases, loss of consciousness. Harmful in contact with skin. May cause irreversible skin lesions, such as a necrosis in the dermis that is visible through the epidermis, after exposure of three minutes to an hour. The corrosive reactions are characterized by ulcers, bleeding, bloody skin necrosis and, after a two-week observation period, bald patches and scars due to discoloration due to whitening of the skin. Prolonged or repeated contact with this mixture may remove the natural skin fat and in this way not cause allergic dermatitis on contact and absorption through the epidermis. May cause an allergic reaction in contact with skin.

11.1.1. Substances

No toxicological information is available for the substances.

11.1.2. Mixture

No toxicological information is available for the substances.

12 ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.2. Mixtures**

No information is available on toxic mixtures in the water.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulation

No data available.

12.4. Mobility in the soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other harmful effects

No data available.

German regulations concerning the classification of hazards for water (WGK): WGK 1 (VwVwS vom 27/07/2005, KBws):

Is little danger to the water.

**13 DISPOSAL CONSIDERATIONS**

Appropriate management of the waste of the mixture and/or the packaging must be determined in accordance with the provisions of Directive 2008/98/EC. Do not burn the elements or expose them to temperatures above 70 ° C. Such a temperature overrun could lead to loss of leak-tightness, leakage and/or explosion of the elements.

13.1. Waste treatment methods

Do not discharge into drains or watercourses.

Waste :

Waste management takes place without damaging human health or the environment, and in particular without endangering water, air, soil, fauna or flora. Dispose of or destroy according to current legislation, preferably by an approved collector or company. Do not contaminate the soil or water with the waste, do not destroy it in the environment.

Dirty packaging :

Empty the packaging completely. Keep the (De) label (s). Hand over to a recognized destroyer.

14 INFORMATION REGARDING TRANSPORT

Transport the product in accordance with the provisions of the ADR by road, RID by rail, IMDG by sea and ICAO / IATA for air transport (ADR 2013 - IMDG 2012 - ICAO / IATA 2013).

14.1. UN-number

3480 ~ see also ONU 3481 - LITHIUM-ION BATTERIES IN AN APPARATUS OR LITHIUM ION BATTERIES PACKED WITH A DEVICE (including lithium ion batteries with polymer membrane) ~

14.2. Proper shipping name in accordance with the model regulations of the UN

UN3480=<UNKNOWN>

14.3. Transport hazard class (s)

– Layout :

**14.4. Packing group**

II

14.5. Environmental hazards

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14.6. Special precautions for the user

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ADR/RID	Klasse	Code	Groep	Etiket	Identif	LQ	Dispo	EQ	Cat	Tunnel
	9	M4	II	9	-	0	188 230 310 348 636 661	E0	2	E
IMDG	Klasse	2°Etik.	Groep	LQ	EMS	Dispo	EQ			
	9	-	II	0	F-A,S-I	188 230 310 348 957	E0			
IATA	Klasse	2°Etik.	Groep	Passagier	Passagier	Vrachtschip	Vrachtschip	Nota	EQ	
	9	-	II	See 965	See 965	See 965	See 965	A51 A88 A99 A154 A164 A183	E0	
	9	-	II	Forbidden	Forbidden	-	-	A51 A88 A99 A154 A164 A183	E0	

For limited quantities, see section 2.7 of the OACI / IATA and chapter 3.4 of the ADR and the IMDG.

For exceptional quantities see section 2.6 of the OACI / IATA and chapter 3.5 of the ADR and the IMDG.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available.

15 STATICALLY MANDATORY INFORMATION

15.1. Specific safety, health and environmental regulations and legislation for the substance or mixture

- Information regarding the classification and labeling in section 2:

The following regulations have been taken into account:

- Directive 67/548 / CEE and its adjustments
- Directive 1999/45 / CEE and its adaptations
- Regulation (EC) no 1272/2008 amended by regulation (EC) no. 618/2012

Information regarding the packaging:

The packaging must be equipped with a child-proof closure (see Regulation (EC) No. 1272/2008, Annex II, Part 3).

The packaging must be made with a readable risk indication (see Regulation (EC) No. 1272/2008, Annex II, Part 3).

- Special provisions:

No data available. –

German regulations concerning the classification of hazards for water (WGK):

Germany: WGK 1 (VwVwS vom 27/07/2005, KBws)

15.2. Chemical safety assessment

No data available

**16 OTHER INFORMATION**

Since the working conditions of the user are not known to us, the information provided in the current safety data sheet is based on our knowledge and on national and Community regulations. The mixture may not be used for purposes other than those specified in Section 1 without prior written processing instructions. It is always the responsibility of the user to take all necessary measures to comply with the requirements of the laws and local regulations. The information provided in this safety data sheet must be considered as a description of the safety requirements relating to this mixture and not as a guarantee of its properties

Complies with directives 67/548 / EEC, 1999/45 / EC and the modifications to them.

Warning signals



Contains:

LITHIUM TRANSITION METAL OXIDATE

Risk phases:

- R 43 - May cause sensitization by skin contact.
- R 21 - Harmful in contact with skin.
- R 14/15 - Reacts violently with water and forms flammable gas.
- R 34 - Causes burns.

Safety phases:

- S 1/2 - Keep locked up and out of the reach of children.
- S 26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 36/37/39 - Wear suitable protective clothing, gloves and eye / face protection.
- S 43 S 45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S 46 - If swallowed, seek medical advice immediately and show this container or label.
- S 27 - Take off immediately all contaminated clothing.
- S 28 - After contact with skin, wash immediately with plenty of soap and water.
- S 30 - Never pour water on this substance.

Name of sentences H, EUH and R as mentioned in section 3:

- H228 - Flammable solid.
- H261 - In contact with water, flammable gases are released.
- H302 - Harmful if swallowed.
- H311 - Toxic in contact with skin.
- H314 - Causes severe skin burns and eye damage.
- H317 - May cause an allergic skin reaction.
- EUH014 - Reacts violently with water.
- R 11 - Highly flammable.

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- R 14 - Reacts violently with water.
- R 15 - Forms extremely flammable gas in contact with water.
- R 22 - Harmful if swallowed.
- R 24 - Toxic in contact with skin.
- R 34 - Causes burns.
- R 43 - May cause sensitization by skin contact.

Abbreviations:

- ADR : European Agreement concerning the international transport of dangerous goods by road.
- IMDG : International Maritime Dangerous Goods.
- IATA : International Air Transport Association.
- ICAO : International Civil Aviation Organization.
- RID : Regulations concerning the International carriage of Dangerous goods by rail.
- WGK : Wassergefahrdungsklasse (Water Hazard Class).
- GHS02 : flame
- GHS05 : corrosion
- GHS07 : exclamation mark