

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 09/16/2016

Reviewed on 09/16/2016

1 Identification

- **Product Identifier**
- **Trade name: Lithium Ion Rechargeable Battery**
- **Relevant identified uses of the substance or mixture and uses advised against:**
No further relevant information
- **Product Description** Hard Plastic/Rubber/Aluminum Shell – Used for Electronics Applications
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
Baccus Global, LLC
1 N. Federal Hwy
St. 200
Boca Raton, FL 33432
561-367-3750
- **Emergency telephone number:** Chemtrec 1-800-424-9300 or outside USA 1-703-527-3887

* 2 Hazard(s) Identification

- **Classification of the substance or mixture:**



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 1 H360 May damage fertility or the unborn child.

Aquatic Acute 3 H402 Harmful to aquatic life.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **Additional information:**

As a solid manufactured article, exposure to hazardous ingredients is not expected with normal use. This battery is an article pursuant to 29 CFR 1910.1200 and as such is not subject to the OSHA Hazard Communication Standard requirements. The information contained in this material safety data sheet contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

- **Label elements:**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS06



GHS08

- **Signal word:** Danger

- **Hazard-determining components of labeling:**

Lead dioxide

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Trade name: Lithium Ion Rechargeable Battery
Hazard statements:

- H301 Toxic if swallowed.
- H351 Suspected of causing cancer.
- H360 May damage fertility or the unborn child.
- H402 Harmful to aquatic life.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P273 Avoid release to the environment.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P330 Rinse mouth.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Unknown acute toxicity:

This value refers to knowledge of known, established toxicological or ecotoxicological values.
44 % of the mixture consists of component(s) of unknown toxicity.

Hazard description:

This product is Lithium Ion Rechargeable battery that is used in a variety of applications.

Not dangerous with normal use. This battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

These chemicals within this battery are contained in a sealed enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by inhalation, ingestion, eye contact and skin contact.

Classification system: NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

NFPA ratings (scale 0 - 4)

HMIS-ratings (scale 0 - 4)


Hazard(s) not otherwise classified (HNOC): None known

* 3 Composition/Information on Ingredients

Non-hazardous components:

CAS: 7440-44-0	Carbon	15-35%
RTECS: FF 5250100		
	Polyvinylidenfluorid	2-12%

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CAS: 7732-18-5	Water, distilled water, deionized water	15-35%
<ul style="list-style-type: none"> · Chemical characterization: Mixtures · Description: Mixture of substances listed below with non-hazardous additions. 		
<ul style="list-style-type: none"> · Dangerous Components: 		
CAS: 7440-50-8 RTECS: GL 5325000	Copper ⚠ Flam. Sol. 1, H228; ⚠ STOT SE 3, H335; Aquatic Acute 3, H402; Aquatic Chronic 4, H413	15-35%
CAS: 7429-90-5 RTECS: BD 0330000	Aluminium ⚠ Flam. Sol. 2, H228	5-10%
CAS: 7664-93-9	sulfuric acid ⚠ Skin Corr. 1A, H314	≤ 2.5%
CAS: 1309-60-0 RTECS: OG 0700000	Lead dioxide ⚠ Repr. 1A, H360; STOT RE 2, H373; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	≤ 2.5%
CAS: 7439-92-1 RTECS: OF 7525000	Lead ⚠ Acute Tox. 2, H330; ⚠ Carc. 2, H351; ⚠ Acute Tox. 4, H302	≤ 2.5%

- **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

* 4 First-Aid Measures

- **Description of first aid measures:**

- **General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation occurs, consult a doctor.

- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing:** Do not induce vomiting; immediately call for medical help.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed:**

Lead: Exposure can result in lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; encephalopathy; kidney disease; hypertension.

- **Indication of any immediate medical attention and special treatment needed:**

No further relevant information available.

5 Fire-Fighting Measures

- **Extinguishing media:**

- **Suitable extinguishing agents:**

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **Special hazards arising from the substance or mixture:** No further relevant information available.

- **Advice for firefighters:**

- **Protective equipment:**

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

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* 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to section 13.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and Storage

- **Handling**
- **Precautions for safe handling:** Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep protective respiratory device available.
- **Conditions for safe storage, including any incompatibilities:**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s):** No further relevant information available.

* 8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**

· Components with occupational exposure limits:

7440-50-8 Copper

PEL Long-term value: 1* 0.1** mg/m³
as Cu *dusts and mists **fume

REL Long-term value: 1* 0.1** mg/m³
as Cu *dusts and mists **fume

TLV Long-term value: 1* 0.2** mg/m³
*dusts and mists; **fume; as Cu

7429-90-5 Aluminium

PEL Long-term value: 15*; 5** mg/m³
*Total dust; ** Respirable fraction

REL Long-term value: 10* 5** mg/m³
as Al*Total dust**Respirable/pyro powd./welding f.

TLV Long-term value: 1* mg/m³
as Al; *as respirable fraction

7664-93-9 sulfuric acid

PEL Long-term value: 1 mg/m³

REL Long-term value: 1 mg/m³

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TLV	Long-term value: 0.2* mg/m ³ *as thoracic fraction
1309-60-0 Lead dioxide	
PEL	Long-term value: 0.05 mg/m ³ as Pb; See 29 CFR 1910.1025
REL	Long-term value: 0.05* mg/m ³ as Pb;*8-hr TWA; See Pocket Guide App. C
TLV	Long-term value: 0.05 mg/m ³ as Pb; BEI
7439-92-1 Lead	
PEL	Long-term value: 0.05* mg/m ³ *see 29 CFR 1910.1025
REL	Long-term value: 0.05* mg/m ³ *8-hr TWA ;See PocketGuide App.C
TLV	Long-term value: 0.05* mg/m ³ *and inorganic compounds, as Pb; BEI
· Ingredients with biological limit values:	
1309-60-0 Lead dioxide	
BEI	30 µg/100 ml blood not critical Lead
7439-92-1 Lead	
BEI	30 µg/100 ml blood not critical Lead
	10 µg/100 ml blood not critical Lead (women of child bearing potential)

· **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

· **Exposure controls:**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing and wash before reuse.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

· **Breathing equipment:** Not necessary under normal conditions.

· **Protection of hands:** Not necessary under normal conditions.

· **Material of gloves:** Not applicable

· **Penetration time of glove material:** Not applicable.

· **Eye protection:** Not necessary under normal conditions.

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9 Physical and Chemical Properties

Information on basic physical and chemical properties**General Information****Appearance:****Form:** Plastic/Rubber/Aluminum Shell**Color:** Black**Odor:** Odorless**Odor threshold:** Not determined.**pH-value:** Not applicable.**Change in condition****Melting point/Melting range:** Not determined.**Boiling point/Boiling range:** 100 °C (212 °F)**Flash point:** None**Flammability (solid, gaseous):** Not determined.**Ignition temperature:** 400 °C (752 °F)**Decomposition temperature:** Not determined.**Auto igniting:** Product is not self-igniting.**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:****Lower:** 0.0 Vol %**Upper:** 0.0 Vol %**Vapor pressure @ 20 °C (68 °F):** 23 hPa (17 mm Hg)**Density:** Not determined.**Relative density:** Not determined.**Vapor density:** Not applicable.**Evaporation rate:** Not applicable.**Solubility in / Miscibility with:****Water:** Insoluble.**Partition coefficient (n-octanol/water):** Not determined.**Viscosity:****Dynamic:** Not applicable.**Kinematic:** Not applicable.**Solvent content:****Organic solvents:** 0.0 %**Water:** 13.5 %**Solids content:** 52.6 %**Other information:** No further relevant information available.

* 10 Stability and Reactivity

Reactivity: No further relevant information available.**Chemical stability:** Stable under normal conditions.**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

* 11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

7429-90-5 Aluminium		
Oral	LD50	>2000 mg/kg (rat)
Inhalative	LC50/4 h	888 mg/l (rat)
7664-93-9 sulfuric acid		
Oral	LD50 Oral	2140 ml/kg (rat)
Inhalative	LC50/96 hours	375 mg/l (rat) Sulfuric acid is harmful by all routes of entry.
7439-92-1 Lead		
Inhalative	LC50/96 hours (static)	0.44 mg/l (Cyprinus carpio) 1.17 mg/l (Oncorhynchus mykiss)

- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** No irritating effect.
- **Subacute to chronic toxicity:**
Lead: Exposure can result in lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; encephalopathy; kidney disease; hypertension.

- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.

- **Carcinogenic categories:**
- **IARC (International Agency for Research on Cancer):**
Group 1 - Carcinogenic to humans
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to its carcinogenicity to humans
Group 4 - Probably not carcinogenic to humans

1309-60-0	Lead dioxide	2A
7439-92-1	Lead	2B

- **NTP (National Toxicology Program):**

1309-60-0	Lead dioxide	R
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Trade name: Lithium Ion Rechargeable Battery

7439-92-1	Lead		R
· OSHA-Ca (Occupational Safety & Health Administration): None of the ingredients are listed.			

* **12 Ecological Information**

- **Toxicity:**
- **Aquatic toxicity:**
 Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

7440-50-8 Copper	
EC50	0.04-0.05 mg/l (Water flea)
7664-93-9 sulfuric acid	
EC50	22 mg/l (daphnia)

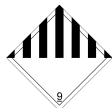
- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:** Harmful to aquatic organisms
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

* **13 Disposal Considerations**

- **Waste treatment methods:**
- **Recommendation:**
 Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Observe all federal, state and local environmental regulations when disposing of this material.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

* **14 Transport Information**

- **UN-Number:**
- **DOT, ADR, IMDG, IATA** UN3481
- **UN proper shipping name:**
- **DOT** Lithium ion batteries contained in equipment
- **ADR** UN3481 Lithium ion batteries contained in equipment
- **IMDG, IATA** LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
- **Transport hazard class(es):**
- **DOT, IMDG, IATA**



- **Class:** 9 Miscellaneous dangerous substances and articles

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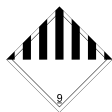
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Trade name: Lithium Ion Rechargeable Battery

· **Label:** 9

· **ADR**



· **Class:** 9 (M4) Miscellaneous dangerous substances and articles
 · **Label:** 9
 · **Packing group:** II
 · **DOT, ADR, IMDG, IATA** II
 · **Environmental hazards:** Not applicable.
 · **Special precautions for user:** Warning: Miscellaneous dangerous substances and articles
 · **Danger code (Kemler):** 86
 · **EMS Number:** F-A,S-I
 · **Segregation groups:** Heavy metals and their salts (including their organometallic compounds)
 · **Stowage Category** A
 · **Stowage Code** SW19 For batteries transported in accordance with SP 376 or SP 377 Category C, unless transported on a short international voyage.
 · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
 · **Transport/Additional information:**
 · **DOT** Lithium ion batteries are not subject to the other requirements of the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185 and Special Provision 188.

· **ADR** New and spent batteries are exempt from all ADR/RID (Special Provision 188).
 · **Excepted quantities (EQ):** Code: E0
 Not permitted as Excepted Quantity

· **IMDG** New and spent batteries Lithium ion batteries are regulated by the International Maritime Organization (IMO) are exempt under Special Provisions 188 and 230.
 · **Limited quantities (LQ):** 0
 · **Excepted quantities (EQ):** Code: E0
 Not permitted as Excepted Quantity

· **IATA** New and spent batteries Lithium ion batteries can be transported under the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) under Packing instructions (PI) 965 (Batteries), PI 966 (Batteries, packed with equipment) and PI 967 (Batteries, contained in equipment).
 · **UN "Model Regulation":** UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9, II

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* 15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

- **Section 355 (extremely hazardous substances):**

7664-93-9	sulfuric acid
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- **Section 313 (Specific toxic chemical listings):**

7440-50-8	Copper
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7429-90-5	Aluminium
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7664-93-9	sulfuric acid
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1309-60-0	Lead dioxide
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7439-92-1	Lead
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- **TSCA (Toxic Substances Control Act):**

All ingredients are listed or exempt from listing.

- **California Proposition 65:**

- **Chemicals known to cause cancer:**

1309-60-0	Lead dioxide
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7439-92-1	Lead
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- **Chemicals known to cause reproductive toxicity for females:**

7439-92-1	Lead
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- **Chemicals known to cause reproductive toxicity for males:**

7439-92-1	Lead
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- **Chemicals known to cause developmental toxicity:**

7439-92-1	Lead
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- **New Jersey Right-to-Know List:**

7440-50-8	Copper
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7429-90-5	Aluminium
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7664-93-9	sulfuric acid
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1309-60-0	Lead dioxide
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7439-92-1	Lead
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- **New Jersey Special Hazardous Substance List:**

7429-90-5	Aluminium	F3, R1
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7664-93-9	sulfuric acid	CA, CO, R2
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1309-60-0	Lead dioxide	CA
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7439-92-1	Lead	CA, TE
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- **Pennsylvania Right-to-Know List:**

7440-50-8	Copper
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7429-90-5	Aluminium
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7664-93-9	sulfuric acid
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7439-92-1	Lead
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- **Pennsylvania Special Hazardous Substance List:**

7440-50-8	Copper	E
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7429-90-5	Aluminium	E
7664-93-9	sulfuric acid	E
7439-92-1	Lead	E

· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency):**

7440-50-8	Copper	D
1309-60-0	Lead dioxide	B2
7439-92-1	Lead	B2

· **TLV (Threshold Limit Value established by ACGIH):**

7429-90-5	Aluminium	A4
7664-93-9	sulfuric acid	A2
1309-60-0	Lead dioxide	A3
7439-92-1	Lead	A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms:**



GHS06 GHS08

· **Signal word:** Danger

· **Hazard-determining components of labeling:**

Lead dioxide

· **Hazard statements:**

- H301 Toxic if swallowed.
- H351 Suspected of causing cancer.
- H360 May damage fertility or the unborn child.
- H402 Harmful to aquatic life.
- H412 Harmful to aquatic life with long lasting effects.

· **Precautionary statements:**

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P273 Avoid release to the environment.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P330 Rinse mouth.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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· **National regulations:**

The product is subject to be classified according with the latest version of the regulations on hazardous substances.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of preparation / last revision:** 09/16/2016 / 5

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEL: Biological Exposure Limit
Flam. Sol. 1: Flammable solids – Category 1
Flam. Sol. 2: Flammable solids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 2: Acute toxicity – Category 2
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Carc. 2: Carcinogenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
Repr. 1: Reproductive toxicity – Category 1
Repr. 1A: Reproductive toxicity – Category 1A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4

· *** Data compared to the previous version altered.**

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