Beiblatt zum Sicherheitsdatenblatt / *Supplement to the safety data sheet*

Abschnitt 1 / *Section 1*

s. Original-Datenblatt / see original safety data sheet

1.1 Produktidentifikation / *Product identification* s. Original-Datenblatt / *see original safety data sheet*

1.2 Verwendungen des Stoffs / *Uses of the substance* s. Original-Datenblatt / *see original safety data sheet*

1.3 Einzelheiten zum Lieferanten / *Details of the supplier*

Firmenname /	*Supplier*	Stürmer Maschinen GmbH,
Straße /	*Street*	Dr.-Robert-Pfleger-Str. 26,
Ort /	*City*	D-96103 Hallstadt
Tel. /	*Phone*	+49 (0)951 96555 - 0 (07:00 - 17:00 Uhr / *07:00 am - 05:00 pm*)
E-Mail /	*E-Mail*	info@stuermer-maschinen.de

1.4 Notrufnummer / *Emergency Telephone*

Wählen Sie die passende Notrufnummer anhand des GHS-Symbols auf Ihrem Gefahrgut oder entsprechend Abschnitt 2.2 des orig. Sicherheitsdatenblattes *.
*Call the appropriate emergency number using the GHS symbol on your dangerous goods or according to section 2.2 of the original safety data sheet *.*

GHS Gefahren-piktogramm / *GHS symbol*	**GHS-Kürzel/ *GHS-no.***	**Mögliche Signalwörter/ *Warning***	**Gefährdungsklassen / *Description of hazards***	**Notrufnummer */ *Emergency Phone **
	GHS01 bis GHS09			+49 (0)951 96555 **- 590** Sammelnotrufnummer Gefahrstoffe
	GHS01	Gefahr oder Achtung / *Danger or Attention*	Explosive Stoffe/Gemische und Erzeugnisse mit Explosivstoff, selbstzersetzliche Stoffe/Gemische, organische Peroxide / *Explosive substances / mixtures and products containing explosives, self-reactive substances / mixtures, organic peroxides*	**- 591**
	GHS02	Gefahr oder Achtung / *Danger or Attention*	Selbstzersetzliche Stoffe/Gemische, organische Peroxide, entzündbare Gase, Aerosole Flüssigkeiten, Feststoffe, selbsterhitzungsfähige Gemische, pyrophore Flüssigkeiten und Feststoffe, Stoffe/Gemische, die bei Berührung mit Wasser entzündbare Gase bilden / *Self-reactive substances / mixtures, organic peroxides, flammable gases, aerosols, liquids, solids, self-heating mixtures, pyrophoric liquids and solids, substances / mixtures which form flammable gases on contact with water*	**- 592**
	GHS03	Gefahr oder Achtung / *Danger or Attention*	Oxidierende Gase, Flüssigkeiten, Feststoffe / *Oxidizing gases, liquids, solids*	**- 593**
	GHS04	Achtung / *Attention*	Verdichtete, verflüssigte, gelöste und tiefgekühlt verflüssigte Gase / *Compressed, liquefied, dissolved and refrigerated liquefied gases*	**- 594**
	GHS05	Gefahr oder Achtung / *Danger or Attention*	Verätzung der Haut, schwere Augenschäden, auch metallkorrosive Eigenschaften / *Chemical burns to the skin, severe eye damage, also metal-corrosive properties*	**- 595**
	GHS06	Gefahr / *Danger*	Äußerst schwere und schwere akute Gesundheitsschäden oder Tod / *Extremely severe and severe acute damage to health or death*	**- 596**
	GHS07	Achtung / *Attention*	Akute Gesundheitsschäden, Reizung der Haut, der Augen und der Atemwege, Sensibilisierung der Haut, narkotisierende Wirkungen / *Acute damage to health, irritation of the skin, eyes and the respiratory tract, sensitization of the skin, narcotic effects*	**- 597**
	GHS08	Gefahr oder Achtung / *Danger or Attention*	Chronische Gesundheitsschäden (Organschädigungen) bei einmaliger oder mehrmaliger Exposition, krebserzeugende, erbgutverändernde und fort-pflanzungsgefährdende Wirkungen, Lungenschäden durch Eindringen von Substanzen in die Lunge (Aspirationsgefahr), Sensibilisierung der Atemwege / *Chronic damage to health (damage to organs) after single or multiple exposure, carcinogenic, mutagenic and reproductive effects, lung damage due to the penetration of substances into the lungs (risk of aspiration), sensitization of the respiratory tract*	**- 598**
	GHS09	Achtung oder ohne Signalwort/ *Attention or without wording*	Giftig für Wasserorganismen mit kurz- und langfristiger Wirkung / *Toxic to aquatic organisms with short and long-term effects*	**- 599**

* 07:00 - 17:00 Uhr, außerhalb dieses Zeitraums kann die Nummer auf dem Sicherheitsdatenblatt angerufen werden /
07:00 am - 05:00 pm, outside this time, the number on the safety data sheet can be called

Für alle anderen Informationen siehe Original-Sicherheitsdatenblatt / *For all other information, see the original safety data sheet*

September 2021

THE POWER OF NEW

EXIDE TECHNOLOGIES

INFORMATION FOR THE SAFE HANDLING OF LEAD-ACID BATTERIES (DRY, NOT FILLED WITH ELECTROLYTE)

1. Identification of Product and Company

Trade Name: Sonnenschein GF blocks, drysafe blocks

Manufacturer

Company: Exide Technologies GmbH

Address: Im Thiergarten, 63654 Büdingen, Germany

Phone: +49 6042 810 (manufacturer)

+49 700 24112112 (in case of emergency; contact ID: ETO)

2. Hazards Identification

No hazards occur during the normal operation of a Lead Battery as it is described in the instructions for use that are provided with the Battery. Lead Batteries have three significant characteristics:

- They contain an electrolyte which contains diluted sulphuric acid. Sulphuric acid may cause severe chemical burns.
- During the charging process or during operation they might develop hydrogen gas and oxygen, which under certain circumstances may result in an explosive mixture.
- They can contain a considerable amount of energy, which may be a source of high electrical current and a severe electrical shock in the event of a short circuit.

The Batteries are labelled with the symbols listed under item 15.

3. Composition and Information on the main Ingredients[1)]

CAS no.	Description	Content [% of weight]	Hazards Category and Statement Code, GHS pictograms
7439-92-1	Lead Grid (metallic lead[2], lead alloys with possible traces of additives)	~ 32	 Dgr | Repr. 1A - H360Df | Lact– H362
n.a.	Active Mass [3] (Battery Oxide, inorganic lead compounds)	~ 32	 Dgs | Repr. 1A - H360Df | Acute Tox. 4 - H332 | Acute Tox. 4 - H302 | STOT RE 2 - H373 | Aquatic Acute 1 - H400 | Aquatic Chronic 1 H410
	Dry Batteries/dry cells contain more than 0,1 % of Lead Monoxide. Lead Monoxide (CAS Nr.: 1317-36-8) is listed as a substance of very high concern under EU REACH Regulation. Once the batteries / cells are filled with electrolyte all Lead Monoxide is transformed and the presence of Lead Monoxide has ended.		
7664-93-9	Electrolyte [4] (diluted sulphuric acid with additives)	~ 29	 Dgs | SkinCorr.1A - H 314
n.a.	Plastic Container / Plastic Parts [5]	~ 7	

[1] Contents may vary due to performance data of the battery/cell. The section describes a battery without electrolyte. A battery without electrolyte is an article that is not ready for use. Once filled with electrolyte, the battery is ready for use. The safety / precautionary information refers to a battery ready for use (filled with electrolyte).
[2] Lead metal (CAS 7439-92-1) is classified as a substance of very high concern under REACH
[3] Composition of active mass depends on the state of charge |
[4] Density of the electrolyte varies in accordance to the state of charge
[5] Composition of the plastic container may vary due to different customer requirements

4. First Aid measures

This information is of relevance only if the battery is broken and this result in a direct contact with the ingredients of the battery.

Electrolyte (Sulphuric acid)

- after skin contact: rinse with water, remove and wash wetted clothing
- after inhalation of acid mist[5)]: inhale fresh air
- after contact with the eyes[5)]: rinse under running water for minimum 15 minutes
- after swallowing[5)]: drink lot of water immediately, don't induce vomiting

Lead compounds

- after skin contact: clean with water and soap
- after contact with the eyes: rinse under running water for minimum 15 minutes

[5)] Seek advice of a medical doctor

5. Firefighting measures

Suitable fire extinguishing agents:

CO_2 is the most effective firefighting agent. Water, foam and dry powder are suitable agents as well. Use of dry powder may cause collateral damages.

Unsuitable fire extinguishing agents:

Water, if the battery voltage is above 120 V

Special protective equipment:

Protective goggles, respiratory protective equipment, acid protective equipment, acid-proof clothing in case of larger stationary battery plants or where larger quantities are stored.

6. Measures to be taken in case of accidental release

This information is of relevance only if the battery is broken and the ingredients are released.

In the case of spillage, use a bonding agent (sand, lime, sodium carbonate) for neutralisation. Dispose the used bonding agent with due regard to local waste management regulations. Do not allow penetration of electrolyte into the sewage system, into earth or water bodies.

7. Handling and Storage

Store under a roof in cool ambient temperature range. For fully charged lead-acid batteries this range is from -40 up to +60ºC. If batteries have the possibility to remain discharged in cold conditions, a correction to the lower temperature limit is recommended to prevent freezing:

- -30ºC at 75% state of charge,
- -20ºC at 50% state of charge,
- and -10ºC at 25% state of charge.

This will help prevent short circuits and damage to the batteries.

Batteries contain electrolyte (diluted sulphuric acid), so batteries should be stored in an upright position. If larger quantities of batteries are stored, it is recommended to consult the regional authorities that are competent for groundwater protection.

8. Exposure limits and personal protective equipment

8.1 Lead and Lead compounds

No exposure to lead and lead-containing battery paste during normal conditions of use.

8.2 Electrolyte (Sulphuric Acid)

Exposure to sulphuric acid and acid mist might occur during filling and charging. Occupational exposure limits for sulphuric acid mist are regulated national basis.

Hazard Class:	Skin corrosive 1A	
Protective equipment:	P280	Wear protective gloves/protective clothing and eye/face protection.
CAS-No:	7664-93-9	
Hazard Statement:	H314	Cause severe skin burns and eye damage
Precautionary Statements:	P102	Store away and keep out of reach of children
	P210	Keep away from heat/sparks/open flames. No smoking.
	P303+P361+P353	IF ON SKIN (or hair): remove immediately all clothing, rinse skin with water, take a shower and seek medical advice
	P305+P351+P338	IF IN EYES: rinse immediately with plenty of water, remove contact lenses and seek medical advice
	P301+P331	IF SWALLOWED: rinse mouth, don't induce vomiting and seek medical advice

9. Physical and Chemical properties

	Lead and Lead compounds	**Electrolyte** (diluted sulphuric acid, 30 to 38.5%)
Appearance		
form:	solid	liquid
colour:	grey	colourless
odour:	odourless	odourless
Safety-related data		
solidification point:	327 °C	-35 to -60 °C
boiling point:	1740 °C	
solubility in water:	very low	approx. 108 to 114 °C
density (20°C):	11.35 g/cm³	complete
vapour pressure (20°C):	N.A.	1.2 to 1.3 g/cm³
		14,6 mbar

Lead and Lead compounds used in Lead-Acid batteries are poorly soluble in water,

Lead can be dissolved in an acidic or alkaline environment only.

10. Stability and Reactivity (Electrolyte – diluted sulphuric acid, 30 - 38,5 %)

- Corrosive, non-flammable liquid
- Thermal decomposition at 338° C.
- Destroys organic materials such as cardboard, wood, textiles.
- Reacts with metals, producing hydrogen
- Vigorous reactions on contact with sodium hydroxide and alkalis.

11. Toxicological Information

This information does not apply to the finished product “lead-acid battery”. This information only applies to its compounds in case of a broken product. Different exposure limits exist on a national level.

11.1 Electrolyte (diluted sulphuric acid):

Sulphuric Acid is intensely corrosive to skin and mucous membranes; the inhalation of mists may cause damage to the respiratory tract.

11.2 Lead and Lead compounds

Lead and its compounds used in a Lead Acid Battery may cause damage to the blood, nerves and kidneys when ingested. The lead contained in the active material is classified as toxic for reproduction.

12. Ecological Information

This information does not apply to the finished product “lead-acid battery”. This information only applies to its compounds in case of a broken product and the compounds are released to the environment.

12.1 Electrolyte (diluted sulphuric acid)[6]

In order to avoid damage to the sewage system, the acid has to be neutralised by means of lime or sodium carbonate before disposal. Ecological damage is possible by change of pH. The electrolyte solution reacts with water and organic substances, causing damage to flora and fauna. The electrolyte may also contain soluble components of lead that can be toxic to aquatic environments

12.2 Lead and Lead compounds[7]

Lead and Lead compounds are hardly soluble in water.

Lead can be dissolved in an acidic or alkaline environment. Chemical and physical treatment is required for elimination from water. Waste water containing lead must not be disposed of in untreated condition.

13. Recycling Information

Spent lead-acid batteries are subject to regulation of the EU Battery Directive (2006/66/EU) and its adoptions into national legislation.

Spent Lead-Acid batteries (EWC 160601*) are recycled in lead refineries (secondary lead smelters). The components of a spent Lead-Acid battery are recycled or re-processed.

At the points of sale, the manufacturers and importers of batteries, respectively the metal dealers take back spent batteries, and render them to the secondary lead smelters for processing.

For safety reasons and to simplify the collection and recycling or re-processing process, spent Lead-Acid batteries must not be mixed with other batteries. Especially spent high energy batteries (such as Li-Ion batteries) have to be kept separate from spent Lead-Acid batteries.

By no means may the electrolyte (diluted sulphuric acid) is to be emptied in an inexpert manner. This process is to be carried out by the processing companies only.

[6] According to the UBA database, sulphuric acid holds the German Wassergefährdungsklasse (WGK) 1
[7] Lead and Lead Compounds are not classified in the UBA database; hence they hold a default classification WGK 3

14. Transport Regulation

The listed transport rules apply to bloc batteries, batteries assembled in trays as well as to single battery cells. As long as the battery is not filled with electrolyte, the rules for “Battery, dry” apply. Once the batteries are filled with electrolyte they are ready for use. From this stage on the rules for “Batteries, wet, filled with acid” apply.

14.1 Battery, dry

Batteries delivered without electrolyte “dry batteries or cells” are not in the scope of dangerous goods transport regulation.

14.2 Rules applying to “Batteries, wet, filled with acid”

14.1.1 Land transport according to ADR / RID

Special Provision 598: New and spent batteries are not subject to other requirements of ADR/RID if they meet the requirements described in Special Provision 598. These requirements are met if Batteries are:

- packed and secured in a way that they cannot slip, fall or be damaged;
- provided with carrying devices, unless they are suitably stacked, e.g. on pallets;
- free of any dangerous traces of acid on the outside;
- protected against short circuits.

If the requirements of Special Provision 598 are not fulfilled, the transport of new and spent batteries has to meet ADR/RID requirements as follows:

- Hazard class: 8
- UN-No.: 2794
- Proper shipping Name: BATTERIES, WET, FILLED WITH ACID
- Packaging group: none
- Hazard label: 8
- ADR Tunnel restriction code: E

14.1.2 Sea transport according to IMDG Code

- Hazard class: 8
- UN-No.: 2794
- Proper shipping Name: BATTERIES, WET, FILLED WITH ACID
- Packaging group: none
- EmS: F-A, S-B
- Packaging Instruction: P801
- Hazard label: 8

14.1.3 Air transport according to IATA-DGR

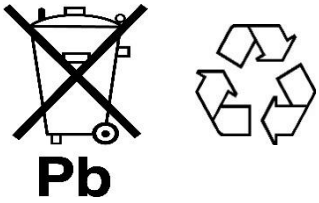
- Class: 8
- UN-No.: 2794
- Proper shipping Name: BATTERIES, WET, FILLED WITH ACID
- Hazard Class: 8
- Packaging Instruction: 870

14.3 Rules for “Batteries, damaged”

- Hazard class: 8
- UN-No.: 2794
- Proper shipping Name: BATTERIES, WET, FILLED WITH ACID
- Packaging group: none
- Packaging instruction: P 801a
  - Transport as dangerous goods (packing in “battery boxes”) or,
  - Special Provision VC2, AP8 (Transport as dangerous good in bulk)
- Hazard label: 8
- ADR Tunnel restriction code : E
- Note: applies to the transport of Lead Acid batteries under UN-No.: 2800 as well.

15. Regulatory Information

In accordance with EU Battery Directive and the respective national legislation, Lead-Acid batteries have to be marked by a crossed out dust bin with the chemical symbol for lead shown below, together with the ISO return/recycling symbol.



In addition Lead-Acid batteries have to be labelled with the hazard symbols described below:

No smoking, no naked flames, no sparks

Shield eyes

Keep way from children's reach

Corrosive (Battery acid)

Note operating instructions

Explosive gas

Labelling might vary due to application and dimension of the Battery. The manufacturer, respectively the importer of the batteries shall be responsible for placing the symbols (a minimum size is specified). In addition, consumer/user information on the significance of the symbols may be attached.

16. Other Information

16.1 Safety Data Sheet

The European Directive 91/155/EEC which described the requirements for Material Safety Data Sheets had been repealed by the Regulation concerning the Registration, Evaluation, Authorization and Restriction of Chemicals on June 1st, 2007 (REACH-Regulation 1907/2006/EC, Art. 31). **The requirement to publish a Safety Data Sheet applies to all suppliers of substances and preparations.**

As already defined under the former Directive there is no requirement to develop and maintain a Safety Data Sheet for products such as Batteries.

16.2 Substances of Very High Concern (SVHC)

The publications of the European Chemicals Agency on **s**ubstances of **v**ery **h**igh **c**oncern are monitored by EXIDE. As defined by REACH, customers will receive the required information if an updated publication may add a substance relevant for our products to the list of SVHC's. On 19 December 2012, four Lead compounds used in the process of battery manufacturing – **Lead Monoxide, Lead Tetroxide, Tetralead Trioxide Sulphate** and **Pentalead Tetraoxide Sulphate** – were added to the list of **S**ubstances of **V**ery **H**igh **C**oncern. As of June 27 2018, **Lead Metal** was added to the SVHC list as well.

Irrespective of the battery design (flooded, MHF, Gel, AGM) all lead based batteries contain Lead Metal (CAS Nr.: 7439-92-1). The content varies but exceeds the notification threshold of 0,1% w/w.

Batteries ready for use do not contain Oxides our Sulphates that are classified SVHC.

Dry Batteries/dry cells (dry charged plates, delivered without electrolyte) **contain more than 0,1 % of Lead Monoxide**. Lead Monoxide (CAS Nr.: 1317-36-8) is listed as a substance of very high concern. Once the batteries / cells are filled with electrolyte all Lead Monoxide is transformed and the presence of Lead Monoxide has ended.

16.3 GHS labels

Among others the European GHS regulation describes classification and labelling of chemicals and preparations. GHS is not a regulation that describes labelling requirements for products such as Lead Acid Batteries.

The six pictograms on batteries target to provide safety information and are based on an international standard. These labels remain unaffected.

16.4 General

The information given above is provided in good faith based on existing knowledge and does not constitute an assurance of safety under all conditions. It is the user's responsibility to observe all laws and regulations applicable for storage, use, maintenance or disposal of the product. If there are any queries, the supplier should be consulted.

However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.