



## SECTION 2: INFORMATION ON INGREDIENTS

### 2.1. Classification of the substance or mixture

Ingredient	CAS No.	Concentration	Hazardous Label
Inorganic Lead/ Lead Compounds	7439-92-1	~ 72%	T
Sulfuric Acid	7664-93-9	~ 20%	C
Fiberglass Separator	65997-17-3	~ 2%	/
Container Plastic (ABS or PP or PPE/PS)	9003-56-9 (ABS)	~ 5%	/
	9003-07-0 (PP)		/
	25134-01-4		/
	9003-55-8		/
	(PPE/ PS)		/
	9003-53-6		/

#### Composition comments:

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 2.2. Label elements

No further information

### 2.3. Other hazards

No further information

## SECTION 3: HAZARDS IDENTIFICATION

### 3.1. Substances/3.2 Mixtures

#### Hazards Identification:

The battery has passed the vibration test, pressure differential test and leakage test at 55° C according to Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulation SPECIAL PROVISION 238. It is not restricted to IATA Dangerous Goods Regulation (DGR) 62th according to special provision A67 and is not restricted to IMDG CODE according to special provision 238.

#### Emergency Overview:

The internal battery materials may cause severe irritation to eyes and skin. Causes burns.

## SECTION 4: FIRST-AID MEASURES

### 4.1. Description of first aid measures

#### **Skin Exposure:**

If the internal battery materials of an opened battery cell come into contact with the skin, immediately flush with plenty of water for at least 15 minutes. Seek immediate medical attention.

#### **Eye Exposure:**

In case of contact the electrolyte contained inside the battery with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Seek immediate medical attention.

Inhalation Exposure: If potential for exposure to mist or dusts occurs, remove immediately to fresh air and seek medical attention.

#### **Oral Exposure:**

If swallowed, do not induce vomiting. Seek immediate medical attention.

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

Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

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

Treat symptomatically.

#### **General information:**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## SECTION 5: FIRE FIGHTING MEASURES

### 5.1. Extinguishing media

#### **Suitable:**

Dry chemical, Sandy soil, Carbon dioxide or appropriate foam.

#### **Unsuitable extinguishing media:**

In the event that a battery is ruptured and the internal components are exposed, DO NOT USE WATER. Do not use carbon dioxide directly on cells.

**5.2. Special hazards arising from the substance or mixture**

Batteries evolve flammable hydrogen gas during charging and may increase fire risk. Containers may explode when heated.

**5.3. Advice for firefighters****Protective Equipment:**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Specific hazards:**

Emit toxic fumes under fire conditions.

**General fire hazards:**

Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of corrosive and flammable materials.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

If batteries show signs of leaking, avoid skin or eyes contact with the material leaking from the battery.

**6.2. Environmental precautions**

Mix with inert material (e.g. dry sand, vermiculite) and transfer to sealed container for disposal.

**6.3. Methods and material for containment and cleaning up**

Use chemical resistant rubber gloves and non-flammable absorbent materials for clean up.

**6.4. Reference to other sections**

No further information





### 8.2.3. Environmental exposure monitoring:

#### Biological limit values:

No biological exposure limits noted for the ingredient(s).

ACGIH Biological Exposure Indices				
Components	Value	Determinant	Specimen	Sampling Time
Lead and lead compounds (CAS 7439-92-1)	200 µg/l	Lead	Blood	*

\* - For sampling details, please see the source document.

## SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Physical	state Solid
Form	Sulfuric acid, gelatinous. Lead, solid
Color	Not available
Odor	Odorless
Odor threshold	Not available
pH	< 1
Melting point/freezing point	Not available.
Initial boiling point and boiling range	235 - 240 °F (112.78 - 115.56 °C) (Sulfuric acid)
Flash point	Below room temperature (as hydrogen gas)
Evaporation rate	< 1 (n-BuAc=1)

#### Flammability (solid, gas):

Upper/lower flammability or explosive limits:

Flammability limit – lower (%)	4 % (Hydrogen)
Flammability limit - upper (%)	74 % (Hydrogen)

Vapor pressure	10 mm Hg
Vapor density	> 1 ( Air=1)
Relative density	1.27 - 1.33
Solubility(ies)	
Solubility (water)	100 % (Sulfuric acid)
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	Not available.

<b>9.2.</b>	<b>Other information</b>
Explosive properties:	Not explosive.
Oxidizing properties:	Not oxidizing

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

No further information

### 10.2. Chemical stability

Stable under normal temperatures and pressures

### 10.3. Possibility of hazardous reactions

Hazardous Polymerization: Will not occur.

### 10.4. Conditions to avoid

Avoid exposure to heat and open flame, Avoid mechanical or electrical abuse and overcharge. Prevent short circuits. Prevent movement which could lead to short circuits.

### 10.5. Incompatible materials

Strong bases. Combustible organic materials. Reducing agents. Finely divided metals. Strong oxidizers. Water.

### 10.6. Hazardous decomposition products

Sulfur dioxide. Sulfur trioxide. Carbon monoxide. Sulfuric acid. Hydrogen

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Information on likely routes of exposure:

Inhalation:

Exposure to contents of an open or damaged battery: Harmful if inhaled.

Skin contact:

Exposure to contents of an open or damaged battery: Causes severe skin burns.





# MATERIAL SAFETY DATA SHEET

Valve Regulated Lead-Acid Rechargeable battery

Date: 16th of January 2023

Eye contact:

Exposure to contents of an open or damaged battery: Causes serious eye damage.

Ingestion:

Exposure to contents of an open or damaged battery: Harmful if swallowed.

Symptoms Related to the physical, Exposure to contents of an open or damaged battery: chemical and toxicological characteristics Dust may irritate the eyes and the respiratory system.

### Information on toxicological effects:

Acute toxicity Exposure to contents of an open or damaged battery: Harmful if inhaled or swallowed.

Components	Species	Test Results
Sulphuric acid (CAS 7664-93-9):	Rat	2140 mg/kg
Acute		
Oral		
LD50		

Skin corrosion/irritation

Exposure to contents of an open or damaged battery: Causes severe skin burns

Serious eye damage/eye irritation

Exposure to contents of an open or damaged battery: Causes serious eye damage.

Respiratory or skin sensitization:

Respiratory sensitization No data available.

Skin sensitization No data available.

Germ cell mutagenicity No data available.

Carcinogenicity:

The International Agency for Research on Cancer (IARC) has classified „strong inorganic acid mists containing sulfuric acid“ as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

IARC Monographs. Overall Evaluation of Carcinogenicity	
Lead and lead compounds (CAS 7439-92-1)	2B Possibly carcinogenic to humans
Sulphuric acid (CAS 7664-93-9)	1 Carcinogenic to humans



# MATERIAL SAFETY DATA SHEET

Valve Regulated Lead-Acid Rechargeable battery

Date: 16th of January 2023

NTP Report on Carcinogens	
Lead and lead compounds (CAS 7439-92-1)	Reasonably Anticipated to be a Human Carcinogen
Sulphuric acid (CAS 7664-93-9)	Known To Be Human Carcinogen
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)	Not regulated

#### Reproductive toxicity:

None under normal conditions. Exposure to contents of an open or damaged battery: May damage fertility or the unborn child.

#### Specific target organ toxicity-single exposure:

None under normal conditions. Exposure to contents of toxicity-single an open or damaged battery: Causes damage to organs exposure(respiratory system).

#### Specific target organ toxicity – repeated exposure:

None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs through prolonged or repeated exposure: Respiratory system.

#### Aspiration hazard chronic effects:

Due to the physical form of the product it is not an aspiration hazard.

Exposure to contents of an open or damaged battery: Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues. Chronic inhalation of sulfuric acid mist may increase the risk of lung cancer.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Exposure to contents of an open or damaged battery: Very toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Lead and lead compounds (CAS 7439-92-1) LC50	Rainbow trout, donaldson trout (Oncorhynchus mykiss)	1.17 mg/l, 96 Hours

**12.2. Persistence and degradability**

The degradation half-life of the product is not known. Lead and its compounds are highly persistent in water.

**12.3. Bioaccumulative potential**

Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain.

**12.4. Mobility in soil**

If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.

**12.5. Results of PBT and vPvB assessment**

The product is insoluble in water and will spread on water surfaces

**12.6. Other adverse effects**

None known.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

Lead-acid batteries are completely recyclable. Return whole scrap batteries to distributor, manufacturer or lead smelter for recycling. For neutralized spills, place residue in acid-resistant containers with sorbent material, sand or earth and dispose of in accordance with local, state and federal regulations for acid and lead compounds. Contact local and/or state environmental officials regarding disposal information.

**SECTION 14: TRANSPORT INFORMATION****Besondere Vorsichtsmaßnahmen für den Benutzer:**

We hereby certify that all KS Tools Valve Regulated Lead-acid Rechargeable batteries REDTEK, TEK-HD, EXODUS, GENESIS conform to the UN2800 classification as "Batteries, wet, Non-Spillable, and electric storage" as a result of passing the Vibration and Pressure Differential Test described in D.O.T., 49 CFR 173.159(a), and IMO/IMDG, and ICAO/IATA packing instruction 872 and note A48, A67, A164 and A183. The batteries are not restricted to IMO/IMDG code according to special provision 238.

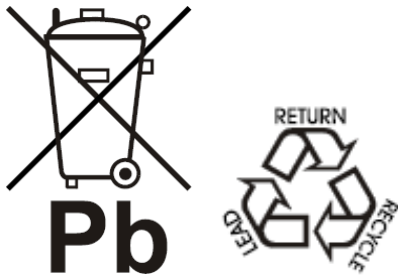
KS Tools Batteries having met the related conditions are EXEMPTING from hazardous goods regulations for the purpose of transportation by DOT, and IATA/ICAO, and therefore are unrestricted for transportation by any means, including air transport. For all modes of transportation, each battery outer package is labeled „NON-SPILLABLE“. All our Batteries are marked non-spillable.

## SECTION 15: REGULATORY INFORMATION

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

#### 15.1.1 EU-Regulations

In accordance with EU2013/56/EU Battery Directive, VRLA batteries should present crossed-out wheeled bin symbol of lead together with the ISO recycling symbol. Does not contain any mercury ( $Hg < 0.0005\%$ ) or cadmium ( $Cd < 0.002\%$ ).



### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: OTHER INFORMATION

Products such as Batteries are not in the scope of regulation which requires the publication of an EU Safety Data Sheet (91/155/EEC).