

Material Safety Data Sheet

1. Product and Company Identification

Brand: ACCURAT
Series name: ACCURAT Commercial
Manufacturer: batterium GmbH
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Models:

Accurat Commercial C115 HD

Accurat Commercial C130 HD

Accurat Commercial C150 HD

Accurat Commercial C165 HD

Accurat Commercial C180 HD

Accurat Commercial C220 HD

Accurat Commercial C180 SHD

Accurat Commercial C230 SHD



2. Composition / Information on Ingredients

Description	CAS No.	EC No. / CHA list No.	REACH registration No.	Concen- tration	Classification according to Regulation (EC) No. 1272/2008 (CLP)		
					Pictogram, signal word (codes)	Hazard class and category code(s)	Hazard state- ment code(s)
Sulfuric acid**/ Index number: 016-020-00-8	7664-93-9	231-639-5	01- 2119458838- 20-0045	22 to 28%	GHS05 Danger	Met. Corr. 1 Skin Corr. 1A Eye Dam. 1	H290 H314 H318
Lead* Index number: 082-014-00-7	7439-92-1	231-100-4		27 to 31%	GHS08 GHS09 Danger	Repr. 1A Lact. STOT RE1 Aquatic Acute 1 Aquatic Chronic 1	H360FD H362 H372 H400 H410
Lead sulphate***	7446-14-2	231-198-9		4 to 7%	GHS07 GHS08 GHS09 Danger	Acute Tox. 4 Acute Tox. 4 Repr. 1A STOT RE 2 Aquatic Acute 1 Aquatic Chronic 1	H302 H332 H360DF H373 H400 H410
Lead dioxide***	1309-60-0	215-174-5		33 to 38%	GHS07 GHS08 GHS09 Danger	STOT RE 2 Repr. 1A Acute Tox.4 Acute Tox. 4 Aquatic Chronic 1	H373 H360 H332 H302 H410

* Classification specified by the manufacturer that includes other classification in addition to the classification specified by Regulation (EC) No 1272/2008.

** Substance having occupational exposure limit value.

*** Classification specified by the manufacturer; the substance is not listed in Annex VI of the Regulation (EC) No. 1272/2008.

Specific concentration limits:

Sulphuric acid (CAS number: 7664-93-9):

Skin Corr. 1A; H314: $C \geq 15\%$
 Skin Irrit. 2; H315: $5\% \leq C < 15\%$
 Eye Irrit. 2; H319: $5\% \leq C < 15\%$

3. Hazards Summary

Classification of the mixture:

Classification according to Regulation (EC) No 1272/2008 (CLP):

Not applicable to the finished product as an article.

Applicable for the components that are not in contact with the battery when it is in its normal state.

During the normal use of automotive batteries, only very few risks are present. Normally batteries do not emit toxic metals or corrosive liquids. However, under special conditions, especially in the event of mechanical damage to the battery housing, the sulfuric acid electrolyte and lead components may be released into the environment.

The product does not contain any PBT or vPvB substances.

- Inhalation:** Sulfuric acid vapors or mist may cause severe respiratory irritation. Lead dust or fumes may cause irritation of upper respiratory tract or lungs.
- Skin contact:** Sulfuric acid may cause severe irritation, burns and ulceration. Lead Compounds are not readily absorbed through the skin.
- Eye contact:** Sulfuric acid may cause severe irritation, burns and cornea damage and possible blindness. Lead Compounds may cause eye irritation.
- Ingestion:** Sulfuric acid may cause severe irritation of mouth, throat, esophagus and stomach. Lead ingestion may cause nausea, vomiting, weight loss, abdominal spasms, fatigue and pain in the arms, legs and joints.

4. First Aid Measures

- Inhalation:** Move the affected person to fresh air. If they are not breathing, administer artificial respiration. Seek medical attention.
- Skin contact:** Immediately remove contaminated clothing and shoes. Wash off affected area with plenty of water. Consult a physician.
- Eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes. Consult a physician.
- Ingestion:** Do not induce vomiting. Rinse mouth and drink plenty of water. Do not administer anything by mouth to an unconscious person. Consult a physician.

5. Fire Fighting Measures

Explosive and flammable gases can be generated when charging the battery. To avoid accidents, smoking and open flames during charging are prohibited. When breaking the wires, avoid the formation of an electric arc. Because of these hazards, batteries should only be charged at a charging station that is designed in accordance with applicable regulations. Avoid short-circuiting the battery terminals during use and installation.

Lower explosion hazard concentration: 4.3 V / V%

- Characteristics of hazards:** In case of fire, smoke and toxic gases and vapours may be formed; the inhalation of such combustion products can have serious adverse effects on health.
- Extinguishing media:** Sulphuric acid, lead, lead sulphate and lead oxides are not flammable. Choose extinguishing media depending on surrounding fire: CO₂, extinguishing powder, alcohol resistant foam, water spray.
- Unsuitable extinguishing media:** N/A

Special Fire Fighting Procedures:

Wear full protective clothing (EN 469, including helmets, boots and gloves) and full-face self-contained breathing apparatus operating in pressure demand. The protective clothing provides a basic level of protection in the event of a chemical accident. In case of fire, promptly isolate area and remove unnecessary personnel from the danger zone. No action shall be taken involving any personal risk or without suitable training. The extinguishing water should not be allowed into drains or water courses.

6. Accidental Release Measures

If the battery cover is damaged, acid may be released into the environment, which is highly corrosive. Wear protective gloves and goggles to avoid accidents.

Caution! A seemingly intact but tilted battery can emit acid through the degassing opening, which could cause an accident.

Personal precautions, protective equipment and emergency procedures

Allow only well-trained experts wearing suitable protective clothing to abide in the area of accident. Avoid contact with skin and eyes. Do not inhale vapour.

Environmental precautions:

Dispose of the spillage and the resulting waste according to the applicable environmental regulations. Do not allow the product and the resulting waste to enter sewers/soil/surface or ground water. Notify the respective authorities in accordance with local law in the case of environmental pollution immediately.

Methods and material for containment and cleaning up:

The leak site should be sealed if it is safe to do so. Shut off the water system and prevent the product from entering the sewer system. Spilled sulphuric acid must be closed in by a barrier and pumped off. Cover residues with absorbent material, e.g. soak up with dry earth, sand or other non-reactive adsorbent and transport to a safe place in closed containers for disposal. It is classified as hazardous waste.

7. Handling and Storage

Precautions for safe handling:

- Observe conventional hygiene precautions.
- Avoid contact with skin, eyes and clothing.
- Do not inhale!
- Do not eat, drink, or smoke when using this product.
- Immediately remove contaminated clothing and wash it before reuse.
- Wash hands thoroughly after the use of this or before eating product.
- Wash hands with water and soap before breaks and take a shower at the end of the work.

Technical measures:

- Wear appropriate personal protective equipment.
- The battery must be protected from strong physical impacts, as it may leak acid if it breaks.

Precautions against fire and explosion:

No special measures required.

Conditions for safe storage, including any incompatibilities:

- The storage room must be cool, dry and well ventilated.
- Protect the battery from weather conditions.
- The storage room has to be fitted with neutralizers and plumbing.

- In case of the recommended storage conditions, no hazardous gases are formed, and no acid is released, because most batteries are stored without acid, or are made with a so-called closed technology.
- Batteries can only be stored in factory-made stacks; higher stacks can cause mechanical damage to the housing.
- Avoid damaging the housing during storage and repacking, keep away from fire, radiant heat and sparks.
- If acid enters the environment, stop spillage immediately and neutralize spilled acid, while wearing appropriate protective equipment (acid-resistant clothing, rubber or plastic gloves, goggles or mask).
- The most important hazards must be indicated on the product.
- Used batteries should be collected in sealable, acid-proof containers and handed over to a waste processor who has the technology and permits to handle and store them.

8. Exposure Controls/Personal Protection

Occupational exposure limit values:

(Commission Directive (EC) No 2000/39 of 8 June 2000):

Sulphuric acid (mist) (CAS number: 7664-93-9): 8 hours: 0.05 mg/m³, - ppm; Short term: - mg/m³, - ppm

Exposure controls

In case of a hazardous material with no controlled concentration limit, it is the employer's duty to keep concentration levels down to a minimum achievable by existing technological means, where the hazardous substance poses no harm to workers.

Appropriate engineering controls

Make sure no battery contents come into contact with clothes, skin and eyes.

Individual protection measures (e.g. personal protective equipment)

Ensure workers are wearing appropriate protective equipment.

Ensure emergency showers and neutralizers are available in case of an accident.

Personal protective equipment must have an EC declaration of conformity or an EC type-approval certificate.

Eye/face protection: Protective glasses are not necessary.

Hand protection: Use appropriate, chemical resistant protective gloves (EN 374). The selection of suitable gloves does not only depend on the material, but also on further marks of quality. The permeation time, breakthrough factor, breakthrough time and durability of the glove may vary from manufacturer to manufacturer therefore the selected glove should be tested for the specific application.

Other: Use appropriate protective clothing and chemical resistant protective boots if necessary.

Respiratory protection: In case of normal use, respiratory protective device is not necessary.

Thermal hazards: No thermal hazards known.

Environmental exposure controls:

No specific prescription.

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

These requirements assume skilled work under normal conditions and usage of the product for appropriate aims. If conditions differ from normal or work is carried out under extreme conditions, an expert's advice is necessary before deciding upon further protective measures.

9. Physical and Chemical Properties

Appearance:	dark grey metal (lead) brown crystals or powder (lead dioxide) white crystals or powder (lead sulphate) colourless liquid (sulfuric acid)
Odour:	pungent (sulfuric acid)
Odour threshold:	no data*
pH:	<1 (sulfuric acid)
Melting point/freezing point:	327°C (lead) 290°C (lead dioxide) 1170°C (lead sulphate)
Initial boiling point and boiling range:	1740 °C (lead) 1010 – 300°C depending the concentration (sulphuric acid)
Flash point:	not relevant (closed cup)
Evaporation rate:	no data*
Flammability (solid, gas):	not flammable (sulfuric acid)
Upper/lower flammability or explosive limits:	not flammable (sulfuric acid)
Vapour pressure:	no data*
Vapour density:	no data*
Relative density:	no data*
Solubility(ies):	insoluble in water (lead), 20°C insoluble in water (lead dioxide), 20°C water: 0.0425 g/l (lead sulphate), 25°C miscible with water during heat generation (sulfuric acid)
Partition coefficient: n-octanol/water:	no data*
Auto-ignition temperature:	no data*
Decomposition temperature:	151 °C (sulfuric acid)
Viscosity:	no data*
Explosive properties:	no data*
Oxidizing properties:	no data*
Crystallization point:	-35 to 10°C, depending the concentration (sulfuric acid)
Density:	11.3 g/cm ³ (lead); 9.530 g/cm ³ (lead dioxide) 6.2 g/cm ³ (lead sulphate) 1.104 – 1.841 g/cm ³ depending the concentration

* = The manufacturer did not carry out any tests on this parameter for the product or the results of the tests are not available at the time of publication of the data sheet.

10. Stability and Reactivity

Reactivity:	No known reactivity.
Chemical stability:	Stable under normal temperatures and pressures.
Possibility of hazardous reactions:	Sulfuric acid: Reacts violently with water and alkalis. The reactions generate heat. It destroys most organic matter. Violent reactions may ignite combustible materials. Strong oxidizing effect.
Conditions to avoid:	Sulfuric acid: Decomposes on exposure to heat.
Incompatibilities:	Sulfuric acid: Water, alkalis, aqueous acids, combustible materials.
Decomposition products:	Sulfuric acid: Sulphur trioxide.

11. Toxicological Information

Acute toxicity:	Based on available data, the classification criteria are not met.
Skin corrosion/irritation:	Based on available data, the classification criteria are not met.
Serious eye damage/irritation:	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation:	Based on available data, the classification criteria are not met.
Germ cell mutagenicity:	Based on available data, the classification criteria are not met.
Carcinogenicity:	Based on available data, the classification criteria are not met.
Reproductive toxicity:	Based on available data, the classification criteria are not met.
STOT-single exposure:	Based on available data, the classification criteria are not met.
STOT-repeated exposure:	Based on available data, the classification criteria are not met.
Aspiration hazard:	Based on available data, the classification criteria are not met.

Relevant toxicological properties: No data available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure: No data available.

Interactive effects: No data available.

Absence of specific data: No data available.

Other information: No data available.

Lead, lead oxide:

Harmful if swallowed, inhaled or in contact with skin. Causes eye and skin irritation. The substance is particularly destructive to mucous membranes and upper respiratory tract and to eye and skin tissues.

LD50 (oral, rat): 10000 mg/kg

Sulphuric acid:

Acute toxicity: LD50 (oral, rat): 2140 mg/kg
 LC50 (inhalative): 375 mg/m³
 Causes severe skin burns and eye damage.

12. Ecological Information

Toxicity: The mixture is not classified as hazardous for the environment.

Sulfuric acid:

LC50 (freshwater fish): 16 mg/l
 EC10/LC10 (freshwater fish): 0.025 mg/l
 EC50/LC50 (freshwater invertebrates): 100 mg/l
 EC10/LC10 (freshwater invertebrates): 0.15 mg/l
 EC10/LC10 (freshwater algae): 100 mg/l
 EC10/LC10 (microorganisms): 2600 mg/l

Persistence and degradability:	Sulfuric acid: Simple, inorganic substance, that is not biodegradable.
Bioaccumulation potential:	Sulfuric acid: Bioaccumulation is not expected. The complete decomposition of sulfuric acid at ambient pH assumes that it is not absorbed into the particles as it does not accumulate in the living organism.
Mobility in soil:	Sulphuric acid: Sulphuric acid is a strong mineral acid that is easily converted to hydrogen ions and sulphate ions by water and is completely miscible with water. Hydrogen ions, although not degraded by nature, contribute to the pH of the local environment. Sulphate ions are found in many mineral species that are present in the environment.
Results of PBT and vPvB assessment:	The product does not contain any PBT or vPvB substances.
Other adverse effects:	Lead, lead oxide: Water hazard class (WGK, German regulation, self-classification): 1 – slightly hazardous for water. MK air limit: 0.1

13. Disposal Considerations

Dispose of in accordance with national and local regulations.

Waste code: 16 06 01* lead batteries (Hazardous waste)

Disposal of the packaging: Dispose of in accordance with applicable regulations.

Sewage disposal: No data available.

Physical/chemical properties that may affect waste treatment options shall be specified: No data available.

Special precautions for any recommended waste treatment: No data available.

14. Transport Information

UN No.:	ADR/RID: UN 2794
Proper shipping name:	BATTERIES, WET, FILLED WITH ACID, electric storage
Packing group:	8
Environmental hazards:	No relevant information available.
Special precautions for user:	Special provisions: 295; 598
Transport in bulk (Annex II of MARPOL and IBC Code):	Not applicable.

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive (EC) No 1999/45 and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive (EEC) No 76/769 and Commission Directives (EEC) No 91/155, (EEC) No 93/67, (EC) No 93/105 and (EC) No 2000/21

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives (EEC) No 67/548 and (EC) No 1999/45, and amending Regulation (EC) No 1907/2006

COMMISSION REGULATION (EU) No 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Contains a substance that is on the Candidate List of Substances of Very High Concern (SVHC) under Regulation (EC) No 1907/2006 (REACH):

Lead (CAS: 7439-92-1)

Contains a substance falling within the scope of Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals:

Lead sulphate (CAs: 7446-14-2)

Chemical safety assessment: Chemical safety assessment has not been carried out.

16. Other Information

Relevant hazard statements

H290 – May be corrosive to metals.

H302 – Harmful if swallowed.

H314 – Causes severe skin burns and eye damage.

H315 – Causes skin irritation.

H318 – Causes serious eye damage.

H319 – Causes serious eye irritation.

H332 – Harmful if inhaled.

H360 – May damage fertility or the unborn child <state specific effect if known > <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

H360FD – May damage fertility. May damage the unborn child.

H362 – May cause harm to breast-fed children.

H372 – Causes damage to organs <or state all organs affected, if known> through prolonged or repeated exposure <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

H373 – May cause damage to organs <or state all organs affected, if known> through prolonged or repeated exposure <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

H400 – Very toxic to aquatic life.

H410 – Very toxic to aquatic life with long lasting effects.

Training advice:

General chemical management education in the framework of occupational safety education. First aid course.

Full text of the abbreviations in the safety data sheet:

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road.

ATE: Acute Toxicity Estimate.

AOX: Adsorbable organic halides.

BCF: Bioconcentration factor.

BOD: Biological Oxygen Demand.

CAS number: Chemical Abstract Service number.

CLP: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

CMR effects: Carcinogenic, mutagenic, reprotoxic effects.

COD: Chemical Oxygen Demand.

CSA: Chemical Safety Assessment.

CSR: Chemical Safety Report.

DNEL: Derived-No-Effect-Level.

ECHA: European Chemical Agency.

EC: European Community.

EC number: EINECS and ELINCS numbers (see also EINECS and ELINCS).

EEC: European Economic Community.

EEA: European Economic Area (EU + Iceland, Liechtenstein and Norway).
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances.
EN: European Norm.
EU: European Union.
EWC: European Waste Catalogue (replaced by LoW – see below).
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.
IATA: International Air Transport Association.
ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
IMDG: International Maritime Dangerous Goods.
IMSBC: International Maritime Solid Bulk Cargoes.
IUCLID: International Uniform Chemical Information Database.
IUPAC: International Union of Pure and Applied Chemistry.
Kow: n-Octanol - Water Partition Coefficient.
LC50: Lethal concentration resulting in 50 % mortality.
LD50: Lethal dose resulting in 50 % mortality (median lethal dose).
LoW: List of Waste.
LOEC: Lowest Observed Effect Concentration.
LOEL: Lowest Observed Effect Level.
NOEC: No Observed Effect Concentration.
NOEL: No Observed Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
OECD: Organization for Economic Cooperation and Development.
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bioaccumulative and Toxic.
PNEC: Predicted No Effect Concentration.
QSAR: Quantitative Structure Activity Relationship.
REACH: Regulation 1907/2006/EC concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.
SCBA: Self Contained Breathing Apparatus.

General:

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