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# material safety data sheet

**battery acid 37%**

**CENTURION AKKU**

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## I. PRODUCT IDENTIFICATION

Chemical/Trade Name (Identity used on label)	Sulphuric Acid 37%, Battery acid, Electrolyte
Chemical Family/Classification	Mineral Acid, Oxidizing
Company name	Nederlandse Accumulatoren Productie BV
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Date issued	February 21st 2007
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## II. HAZARDOUS INGREDIENTS

Materials	% Volumetric Weight	CAS number	MAC value	R-sentences
Sulphuric Acid (Dilute)	37%	7664-93-9 (>60%)	1 mg/m <sup>3</sup> (96%)	35

## III. HAZARDS

Danger	C – Corrosive
	R35 – Causes severe burns
	Sulphuric Acid – reacts violently with strong alkalines, reducing agents and water to produce heat.
Classifying system	Classifying is according to actual EEC-listings. Added is information, supplied by contractor and vendor.

**IV. FIRST AID MEASURES**

Inhalation	Take person into fresh air. Keep the victim calm in a half-sitting way. If necessary, give oxygen and take the person to the hospital as soon as possible.
Skin Contact	Take off contaminated clothing and rinse the person with plenty of water at room temperature. In case of burning injuries, immediately consult a physician.
Eye Contact	Sulphuric Acid – hold eyelids open and rinse for a long period with cool water, and, if possible, first take out contact lenses. Don't use neutralizing agents, and immediately consult a physician.
Ingestion	Sulphuric Acid – Immediately rinse mouth and let the person drink water as precautionary measurement. Do not induce vomiting and take the hospital as soon as possible.

**V. FIRE EXTINGUISHING MEANS**

Flashpoint	N/A
Explosion limits	N/A.
Extinguishing Media	CO <sub>2</sub> , dry chemical or foam.
Special fire fighting procedures	Use pressure-demand, self containing breathing apparatus where acid vapour or mist may be present. Wear protective clothing.

**VI. PROTECTIVE MEASURES TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED**

Personal Measures	Use protective clothing (synthetic materials), and wear safety goggles (or a face-shield).
Environmental Measures	Contain spill by diking it with soda ash (sodium carbonate) or lime (calcium oxide). Cover spill with either chemical. <b>DO NOT FLUSH (LEAD CONTAMINATED) ACID INTO A SEWER!</b>
Waste Disposal Method	Ventilate area. Remove all combustible materials and all sorts of ignition. Contain spill by diking it with soda ash (sodium carbonate) or lime (calcium oxide). Cover spill with either chemical. Mix well. Make certain mixture is neutral (check with pH paper). Collect residue and place in a drum or other suitable container. Dispose of as hazardous waste.

**VII. HANDLING AND STORINGS PRECAUTIONS**

Technical Measures	There are no specific demands to storage rooms or tanks in case of emergency (no fire or explosion hazard). Information to store the material with other materials is not required. Storage tanks need to be locked impenetrably. Recommendation: build storage tanks over an acid resistant spill receptacle (container) , which can store the contents of the above tanks.
Procedure	Always add acid to water to dilute, never add water to acid!

**VIII. SAFE HANDLING PRECAUTIONS**

Personal Hygiene	Wash hands thoroughly before eating or drinking, or putting on make-up.
Preventive measures at non-routine tasks, including normal maintenance	Product consists of no materials, that need to be checked according to limiting values for working areas. Wear recommended eye protection. If clothing becomes saturated with acid, remove and wash affected area with water for 15 minutes. Discard saturated clothing.

<b>Personal Protection Means</b>	
Respiratory Protection	Breathing apparatus is not required under normal circumstances. In case of acid mist, that exceeds the MAC-VALUE of H <sub>2</sub> SO <sub>4</sub> 96% : 1 mg/m <sup>3</sup> , or causes irritations or in case of insufficient ventilation, then use breathing apparatus.
Eyes and facial protection	Safety goggles or face shield.
Hands, arms and body protection	Wear a long sleeved shirt and trousers made of synthetic materials. Also use an impermeable, acid resistant apron and gauntlet type gloves.
Other Special Clothing and Equipment	Use safety shoes with rubber or neoprene boots or steel-toed rubber or neoprene boots worn over socks. Place pants legs over boots to keep acid out of boots. When necessary use acid resistant clothing and shoes.

<b>IX. PHYSICAL DATA</b>	
Material is	Liquid
Colour	Colourless
Odour	Slightly Acidic
Boiling Range	110 – 140°C
PH	<1
Viscosity	2,3 mPa.s
Melting Point	-72°C
Decompositioning temperature	310°C
Vapour Pressure	0,05 Pa (20°C)
Vapour Density	3,4 (air = 1)
Specific Gravity	1,280 kg/l (20°C) (H <sub>2</sub> O = 1)
Flash point	N/A
Explosion limits	N/A
Solubility (H <sub>2</sub> O)	100 %

<b>X. REACTIVITY AND STABILITY</b>	
Stability	Stable under normal circumstances
Conditions to avoid	Prevent smoking, fires, and any other source of ignition around lead acid batteries.
Incompatibility (material to avoid)	Combustible materials (especially finely divided), strong reducing agents, most metals, carbides, organic materials, chlorates, nitrate picrates, and fulminates.
Conditions to avoid	High temperature. Battery electrolyte (acid) will react with water to produce heat. Can react with oxidizing or reducing agents, will produce hydrogen gas. Will react corrosive to metals.
Hazardous Decomposition Products	Hydrogen, sulphur dioxide, sulphur trioxide.
Hazardous Polymerisation	N/A

<b>XI. TOXICOLOGICAL INFORMATION</b>	
<b>Routes and methods of entry</b>	
Inhalation	Battery electrolyte acid mist generated during battery formation may cause breathing problems or respiratory irritation due to corrosive effect.
Skin Contact	Battery electrolyte (acid) may cause irritative contact dermatitis and skin burns due to corrosive effect.
Skin Absorption	Skin absorption is not a significant route of entry.
Eye Contact	Battery electrolyte (acid) will irritate the eyes upon contact. Can cause blindness due to corrosive effect
Ingestion	Ingestion of battery acid may cause irritation to mouth, throat and stomach.

**Signs and symptoms of overexposure**

Acute Effects	Exposure to high concentrations of battery electrolyte (acid) mist causes severe irritation of eyes, respiratory tract and skin. It may also cause tooth erosion, mouth soreness, or breathing difficulties. Contact with battery electrolyte (acid) may irritate the skin and mucous membranes and may cause irreparable corneal damage and blindness as well as facial scarring which can include the eyelids.
Chronic Effects	Repeated or prolonged exposure to battery electrolyte (acid) may cause skin irritation. Repeated or prolonged exposure to mist may erode the teeth, cause dermatitis, chronic irritation of eyes, mouth and stomach, and chronic inflammation of the nose, throat and bronchial tubes.

**XII. ENVIRONMENTAL INFORMATION**

Environmental Protection	Do not dispose of in sewer, ground water or open water course. May not be disposed of in a diluted or neutralised substance in an open water course or sewer. Danger for contaminating drinking water, even in very low amounts when disposed of.
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**XIII. INSTRUCTIONS FOR DISPOSITIONING**

Sulphuric Acid 37%	Recommendation: may not be disposed of with common waste treatment, nor be flushed into sewer.
Empty packaging	Recommendation: may not be disposed of with common waste treatment. Clean with sufficient water, use neutralizing agents when necessary.

**XIV. INFORMATION FOR TRANSPORTATION**

Road Transport (ADR/RID) (International) ADR/GGVS/E Class Number Kemler number UN - number Label Description	8 Corrosives 1b 80 2796 8 2796 Sulphuric Acid
Naval Transport (IMDG): IMDG class Page UN – number Packaging group EMS – number MFAG Marine pollutant Description	8 8147 2796 III 8-15 760 No Sulphuric Acid
Air Transport (ICAO – TI and IATA – DGR): ICAO/IATA class UN/ID – number Packaging group Description	8 2796 III Sulphuric Acid

**XV. LEGALLY REQUIRED INFORMATION**

Classification according to EEC-guidelines	
Sulphuric Acid 96%	EC-number: 231-639-5
Symbol	C – Corrosive
R – Sentence	R35 – causes severe burns.
S – Sentences	S2 – keep away from children. S26 – In case of eye contact immediately rinse with plenty of water and consult physician. S 30 – Never dilute by adding water to the acid.

**XV. ADDITIONAL INFORMATION**

Legislation	This MSDS is according to guideline EEC 91/155/EEG.
Disclaimer	The information to compose this document has been gathered with great care from existing data. Nederlandse Accumulatoren Productie B.V. will not accept any damage or injury, whatever kind or size, which may result of using this document.
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