

SECTION 1: Identification of the substance / preparation and of the company

Product identifier	perma NOVA
Relevant identified uses of the substance or mixture and uses advised against	Lubrication system
Identified use	none
Company	perma-tec GmbH & Co. KG Hammelburger Straße 21 97717 Euerdorf / GERMANY Phone (049) 09704-609-0 Fax (049) 09704-609-50 Homepage www.perma-tec.com E-mail info@perma-tec.com
Address enquiries to	
Emergency phone Company	+49 (0) 9704-609-0 (Mo-Th 8:00-16:30, Fr 8:00-12:00)
Technical information	info@perma-tec.com
Safety Data Sheet	sdb@chemiebuero.de

SECTION 2: Hazards identification**Emergency Overview**

Appearance, Odor: capsule, not determined, not determined

OSHA Regulatory Status

This product is defined as an "article" based on OSHA definition of an article. Therefore, this product is exempt from requirements of the hazard communication standard, 29 CFR1910.1200, hence a MSDS is not required and the sheets are supplied as a service. This MSDS contains valuable information critical to the safe handling and proper use of the product.

Potential health effects

In case of mistreatment (prolonged deep discharge, charge, reverse charge, external short circuit...) and in case of fault, some electrolyte can leak from the cell through the air holes. The electrode materials are only hazardous, if the materials are released by mechanical damaging of the cell or if expose on fire.

Potential environmental effects**SECTION 3: Composition / Information on ingredients**

The product is an article.

Range [%]	Substance
25 - < 50	Manganese dioxide CAS: 1313-13-9
25 - < 50	Zinc CAS: 7440-66-6
5 - < 10	Potassium hydroxide CAS: 1310-58-3
1 - < 5	lithium CAS: 7439-93-2
0,25 - < 1,5	Mercury CAS: 7439-97-6

Comment on component parts

Potassium hydroxide solution, will be set free only by a deliberate destruction of the button cells.
One or several components are named in PRTR Register (Pollutant Release and Transfer Register). See SECTION 3.
The concentrations of the ingredients are valid for batteries. They are not for the complete system.
The structural design prevents release of the hazardous media contained therein when the unit is used for its intended purpose.
Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

Description of first aid measures	Measures are only valid for damaged lubrication systems.
Inhalation	Ensure supply of fresh air. In the event of symptoms seek for medical treatment.
Skin contact	In case of contact with skin wash off immediately with soap and water. Consult a doctor if skin irritation persists.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Shield unaffected eye.
Ingestion	not applicable
Indication of any immediate medical attention and special treatment needed	Treat symptomatically. Forward this sheet to the doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media	Foam, dry powder, water spray jet, carbon dioxide.
Extinguishing media that must not be used	none
Special exposure hazards arising from the substance or preparation itself or combustion products	Unknown risk of formation of toxic pyrolysis products.
Special protective equipment for firefighters	Do not inhale explosion and/or combustion gases. Use self-contained breathing apparatus.
Additional information	Cool containers at risk with water spray jet. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	Lock off contaminated area. Use breathing apparatus if exposed to vapours/dust/aerosol. Use personal protective equipment. Keep people away and stay on the upwind side.
Environmental precautions	No special measures necessary.
Methods and material for containment and cleaning up	Take up mechanically. Take up residues with absorbent material (e.g. sand, sawdust, generalpurpose binder, diatomaceous earth). Dispose of absorbed material in accordance within the regulations.

SECTION 7: Handling and storage

Advice on protection against fire and explosion	Keep away from all sources of ignition - Refrain from smoking.
Requirements for storage rooms and vessels	No special measures necessary.
Advice on storage compatibility	Do not store together with oxidizing agents.
Further information on storage conditions	Protect from heat/overheating. Store in a dry place.

SECTION 8: Exposure controls / personal protection

Additional advice on system design	Ensure adequate ventilation on workstation.
Ingredients with occupational exposure limits to be monitored (US)	not applicable
Respiratory protection	Breathing apparatus in the event of aerosol or mist formation. Breathing apparatus in the event of high concentrations.
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. Butyl rubber, >120 min (EN 374).
Eye protection	Safety glasses.
Skin protection	Alkali-resistant protective clothing.
General protective measures	Measures are only valid for damaged lubrication systems. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier.
Hygiene measures	Wash hands before breaks and after work.
Delimitation and monitoring of the environmental exposition	not determined

SECTION 9: Physical and chemical properties

Form	capsule
Color	not determined
Odor	not determined
pH-value	not applicable
pH-value [1%]	not determined
Boiling point [°C]	not determined
Flash point [°C]	not applicable
Flammability [°C]	not determined
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	not determined
Bulk density [kg/m³]	not applicable
Solubility in water	soluble (Liquid)
Partition coefficient [n-octanol/water]	not determined
Viscosity	not applicable
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	not determined
Decomposition temperature [°C]	not determined

SECTION 10: Stability and reactivity

Reactivity	See SECTION 10.3.
Chemical stability	Stable under normal ambient conditions (ambient temperature).
Possibility of hazardous reactions	Reactions with acids and strong oxidizing agents. At temperatures over 70 °C risk of bursting and withdrawal of electrolyte liquid exists.
Conditions to avoid	Strong heating.
Incompatible materials	No information available.
Hazardous decomposition products	Hydrogen.

SECTION 11: Toxicological information**Information on toxicological effects****Acute toxicity**

Range [%]	Substance
5 - < 10	Potassium hydroxide, CAS: 1310-58-3 LD50, oral, Rat: 273 mg/kg (RTECS).
25 - < 50	Manganese dioxide, CAS: 1313-13-9 LD50, oral, Rat: > 3478 mg/kg (RTECS).

Acute oral toxicity	not determined
Acute dermal toxicity	not determined
Acute inhalational toxicity	not determined
Serious eye damage/irritation	not determined
Skin corrosion/irritation	not determined
Respiratory or skin sensitisation	not determined
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined
General remarks	Information are only valid for damaged lubrication systems.

SECTION 12: Ecological information**Toxicity**


Range [%]	Substance
5 - < 10	Potassium hydroxide, CAS: 1310-58-3 LC50, (96h), Gambusia affinis: 80 mg/l (IUCLID).
25 - < 50	Zinc, CAS: 7440-66-6 LC50, (48h), fish: < 1 mg/l.

Fish toxicity	not determined
Daphnia toxicity	not determined
Behaviour in environment compartments	not determined
Behaviour in sewage plant	not applicable
Bacteria toxicity	not determined
Biological degradability	not applicable
COD	not determined
BOD 5	not determined
AOX-advice	not applicable
2006/11/EC:	not applicable
Other adverse effects	Information are only valid for damaged lubrication systems.

SECTION 13: Disposal considerations

Product	For recycling, consult manufacturer.
Contaminated packaging	Uncontaminated packaging may be taken for recycling.
RCRA Hazard Class (40CFR 261)	Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities.

SECTION 14: Transport information

Transport by land according to ADR/RID	NOT SUBJECT OF ADR IN ACCORDANCE TO SPECIAL PROVISIONS 188F) FOR BUTTON CELL.
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code)
Inland navigation (ADN)	NOT SUBJECT OF ADR IN ACCORDANCE TO SPECIAL PROVISIONS 188F) FOR BUTTON CELL.
Marine transport in accordance with IMDG	NOT SUBJECT OF IMDG IN ACCORDANCE TO SPECIAL PROVISIONS 188 AND 188.6 FOR BUTTON CELLS
Air transport in accordance with IATA	NOT SUBJECT OF IATA IN ACCORDANCE TO PACKING INSTRUCTION 970 SECTION II EXCEPTION FOR BUTTON CELLS.
DOT Road Shipment Information (49 CFR)	UN/NA 3091 Lithium batteries, contained in equipment. (Special provisions 188) 9 II
- Label	

SECTION 15: Regulatory information**US Regulations**

National regulations	29 CFR 1910.1200, ANSI Z400.1-2010, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA, TSCA, California - Prop. 65
- SARA, 302	One or some ingredient(s) are listed under this regulation.
- SARA, 311	One or some ingredient(s) are listed under this regulation.
- SARA, 313	One or some ingredient(s) are listed under this regulation.
- CA Proposition 65	Some chemical substances in this material are named in California-P65 list.
- TSCA	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory.
- FDA	
American Conference of Governmental Industrial Hygienists - ACGIH	One or some ingredient(s) are listed under this regulation.
International Agency for Research on Cancer IARC	not determined
National Toxicology Program - NTP	Not Determinated.
HAP-VOC	
Transport-regulations	DOT-Classification, ADR (2013); IMDG-Code (2013, 36. Amdt.); IATA-DGR (2013).
Other Right to Know Laws	

EC Regulations

1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC

Labelling

Hazard symbols	none
R-phrases	none
S-phrases	none
Special labelling	not applicable

SECTION 16: Other information

Observe employment restrictions for people not applicable

Customs Tariff not determined

HMIS Ratings

HEALTH	1	1 - Slight Hazard
FLAMMABILITY	1	1 - Slight Hazard
REACTIVITY	2	2 - Moderate Hazard
PERSONAL PROTECTION	X	X - Personal protection rating to be supplied by user depending on use conditions

NFPA Ratings

1	TOP, FLAMMABILITY: 1 - Slight Hazard
1 2	LEFT, HEALTH: 1 - Slight Hazard RIGHT, REACTIVITY: 2 - Moderate Hazard
ALK	BOTTOM, SPECIAL NOTICE: ALK - Alkaline

Modified position

SECTION 2 been added: The structural design prevents release of the hazardous media contained therein when the unit is used for its intended purpose.

Key / Legende:

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; EINCES = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit; TSCA = Toxic Substances Control Act

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