SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH)

Art. 2170, E 90 SUPER

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Identification / trade name: Art. 2170, E 90 SUPER
REACH registration number: not notifiable
UFI: N9TU-E7UH-560D-11GS

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance / mixture:
Descaler

1.3 Details of the supplier of the safety data sheet

Supplier / Manufacturer: HWR-CHEMIE GmbH
Moosfeldstrasse 7
D-82275 Emmering

Telephone: 0049-8141-51030
Telefax: 0049-8141-510355
E-mail: info@hwr-chemie.de

E-mail (competent person): infoSDB@hwr-chemie.de
Information contact: Laboratory

1.4 Emergency phone

Emergency phone Germany: 0049-8141-51030 (only during office hours)
Emergency phone Austria: 0043 1 406 43 43 (poison information centre)

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No 1272/2008
Skin Corr. 1B, H314; Eye Dam. 1, H318

2.2 Label elements

Regulation (EC) No 1272/2008

Hazard pictograms

Signal word: Danger.

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Hazard components for labeling

Phosphoric acid

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container at hazardous or special waste collection point.

2.3 Other hazards

The substances contained in the mixture do not fulfill the PMT/vPvM criteria or the PBT/vPvB criteria according to REACH, Annex XIII. The substances in this mixture do not have any endocrine disrupting properties.

SECTION 3. Composition / information on ingredients

3.1 Substances

This product is a mixture.

3.2 Mixtures

Chemical characterization

Mixture of surfactants, acids, corrosion inhibitors and auxiliaries in water.

Hazardous ingredients

35 - 40 % Phosphoric acid, EG 231-633-2, CAS 7664-38-2, Acute Tox. 4, H302; Skin corr. 1B, H314; Met. Corr. 1, H290, Specific concentration limits: Eye Irrit. 2, H319: 10 % ≤ C < 25 %
Skin Corr. 1B, H314: C ≥ 25 % / Skin Irrit. 2, H315: 10 % ≤ C < 25 %

Additional information

Full text of hazard classes and H-phrases: see section 16

SECTION 4. First aid measures

4.1 Description of first aid measures

General informations: In case of persistent symptoms seek medical advice. Remove contaminated clothing. In case of unconsciousness place patient into stable side position for transportation. Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

In case of inhalation: Provide affected person with fresh air and seek medical advice depending on the symptoms.

In case of skin contact: Contaminated, soaked clothing should be immediately removed. Wash skin thoroughly with soap and water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

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In case of eye contact:	Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.
In case of ingestion:	Rinse mouth immediately and then drink plenty of water. Do not induce vomiting. Seek medical advice at once.
Additional hints:	Self-protection of the first aider: wear protective clothing, gloves and safety goggles (see Section 8).

4.2 Most important symptoms and effects, both acute and delayed

Contact with eyes may cause reddening, running eyes and smarting pain. Prolonged contact may lead to irreversible damage up to blindness. Ingestion may cause severe pain in the digestive tract. Possible burn of the upper part of gastrointestinal tract. Inhalation may cause cough and shortness of breath. Risk of pulmonary oedema.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment (decontamination, vital functions), no known specific antidote.

SECTION 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media:	Water spray jet / foam / CO2 / dry extinguishing powder
Unsuitable extinguishing media:	Full water jet.

5.2 Special hazards arising from the substance or mixture

Spilled material reacts with certain metals (e.g. lead, aluminium, zinc and magnesium) to form hydrogen gas.
In case of fire may be liberated: corrosive vapors.

5.3 Advice for fire-fighters

The product itself is not flammable. Co-ordinate fire-fighting measures to the fire surroundings.
Special protective equipment: Wear full protective suit with self-contained breathing apparatus.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes. Wear protective equipment.

6.2 Environmental precautions

Large quantities of spills should be contained by. Do not allow to enter undiluted into surface water or drains.

6.3 Methods and material for containment and cleaning up

Absorb with an absorbent material and dispose of according to local regulations.
Alkalis may be used for pH neutralization.

6.4 Reference to other sections

Observe protective measures in sections 8 and disposal considerations in section 13.

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SECTION 7. Handling and Storage

7.1 Precautions for safe handling

Advices on safe handling

Wear protective clothing. Open carefully and keep container closed when not in use.
General hygiene measures:
- Eating, drinking or smoking is prohibited in areas, where work is performed.
- Wash your hands after use.
- Take off contaminated clothing and protective equipment before entering eating areas.

Precautions against fire and explosion

Product does not burn itself.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store only in the original container or a corrosion-resistant container. Store locked up.
Storage compatibility and limitations according to TRGS 510 must be observed.

7.3 Specific end uses

Observe product information sheet.
eCl@ss (8.0): 30-02-15-06 / GISCODE: GS80

SECTION 8. Exposure controls / Personal protection

8.1 Control parameters

Workplace exposure limits according to TRGS 900

Substances: Ortho phosphoric acid
Occupational exposure limit: 2 mg/m³ E
Top limiting and exceedance factor: 2 (I)
Notes: DFG, AGS, Y, EU

Substances: 2-(2-Ethoxyethoxy)ethanol
Occupational exposure limit: 6 ppm, 35 mg/m³
Top limiting and exceedance factor: 2 (1)
Notes: AGS, Y, 11

Community workplace exposure limits

Substances: Ortho phosphoric acid
EU limits (8h): 1 mg/m³
EU limits (Short-term): 2 mg/m³

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8.2 Exposure controls / Personal protection equipment

Appropriate engineering controls
See section 7. No additional measures necessary.

Personal protection equipment

Respiratory protection:	No personal respiratory protective equipment normally required.
Hand protection:	Tested gloves with breakthrough time >= 8 hours made from NR 0.5 mm, CR 0.5 mm, NBR 0.35 mm, Butyl 0.5 mm, FKM 0.4 mm, PVC 0.5 mm
Eye protection:	use safety goggles
Protective clothing:	usual work clothes

General health and safety measures
Respect good personal hygiene. Do not drink, eat or smoke while handling.

Environmental exposure controls
See section 6 and 7.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

General information

Physical state:	liquid
Colour:	colourless
Odour:	mild
pH value (undiluted):	approx. 0
pH value (1 %):	approx. 1
Melting point/Freezing point (°C):	approx. -20
Boiling temperature (°C):	approx. 100
Flashpoint (°C):	not applicable
Flammability (solid, gas):	not applicable
Lower explosion limit:	not determined
Upper explosion limit:	not determined
Vapour pressure (hPa):	approx. 23
Relative vapor density:	not determined
Density (20 °C):	approx. 1.24
Solubility:	completely mixable with water
Partition coefficient (KOW):	not determined
Ignition temperature:	not determined
Decomposition temperature:	not determined
Dynamic viscosity (mPas):	< 10
Particle properties:	not applicable

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9.2 Other information

Other safety characteristics
No other physical and chemical data has been recorded.

SECTION 10. Stability and Reactivity

10.1 Reactivity
Reacts with strong alkalis under intense heat development. May heat up during dilution.

10.2 Chemical stability
Stable under the specified storage conditions.

10.3 Possibility of hazardous reactions
There are expected no hazardous reactions for intended use.

10.4 Conditions to avoid
No hazardous conditions known. Note the information about handling and storage in section 7.

10.5 Incompatible materials
Avoid contact with aluminum, magnesium, tin, zinc and other base metals (hydrogen gas formation possible).

10.6 Hazardous decomposition products
No hazardous decomposition products known.

SECTION 11. Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity
Phosphoric acid
LD50 oral = 1250 mg/kg body weight (rat) (literature)

Acute Toxicity Estimate of the mixture:
ATE mix (oral) > 2000 mg/kg body weight

Skin Corrosion / Irritation
Mixture is classified as corrosive to the skin.

Serious Eye Damage / Irritation
Mixture causes serious eye damage.

Sensitisation
Mixture does not contain any sensitising substances.

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
Mixture does not contain any substances which are classified as carcinogenic, mutagenic or toxic for reproduction.

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Specific target organ toxicity (single exposure)
Mixture does not contain any substances with specific target organ toxicity.

Specific target organ toxicity (repeated exposure)
Mixture does not contain any substances with specific target organ toxicity.

Aspiration hazard
Not classified. Mixture does not contain any hydrocarbons.

11.2 Information on other hazards

Endocrine disrupting properties
This mixture does not contain any substances which are identified as endocrine disrupting.

Other information
No further data available.

SECTION 12. Ecological information

The available data refer to the substances in the mixture. The mixture as a whole has not been tested.

12.1 Toxicity
This mixture does not contain any substances classified as dangerous for the environment.

12.2 Persistence and degradability
Phosphoric acid
Hydrolysis in water. Methods for determining the biological degradability are not applicable to inorganic substances.

The surfactants contained in this preparation comply with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents.

12.3 Bioaccumulative potential
Phosphoric acid
No further relevant information available.

12.4 Mobility in soil
Phosphoric acid
No further relevant information available.

12.5 Results of PBT and vPvB assessment
This mixture does not contain any substances which are identified as PBT or vPvB.

12.6 Endocrine disrupting properties
This mixture does not contain any substances which are identified as endocrine disrupting.

12.7 Other adverse effects
The mixture does not contain any substances which are listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

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SECTION 13. Disposal considerations

13.1 Waste treatment methods

Recommendation

Cleaning concentrates should not be disposed of via wastewater. Hazardous waste according to European list of wastes. Dispose of in accordance with local, official regulations.

Waste codes/waste designations according to EWC

20 01 29 (detergents containing hazardous substances)

Packaging

Contaminated package

Hazardous waste according to European list of wastes. Dispose of in accordance with local, official regulations. Waste code 15 01 10 (packaging containing residues of or contaminated by hazardous substances)

Cleaned package

Non contaminated and clean packagings can be used for recycling.

SECTION 14. Transport information

14.1 UN number or ID number

1805

14.2 UN Proper shipping name:

ADR / RID:

Phosphoric acid, liquid

IMDG-Code / ICAO-TI / IATA-DGR:

Phosphoric acid, liquid

14.3 Transport hazard class(es)

ADR / RID / IMDG-Code / ICAO-TI / IATA-DGR:

8

14.4 Packing group

III

14.5 Enviromental hazards

Not classified.

14.6 Special precautions for user

See section 6 and 8.

14.7 Maritime transport in bulk according to IMO instruments

not applicable

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SECTION 15. Regulatory information

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

EU regulations

Subject to the Regulation (EC) No. 648/2004 on detergents.

National regulations (Germany)

Maternity Protection Act (MuSchG): not applicable.
Major Accidents Ordinance (12. BImSchV): not applicable.
Observe employment restrictions for young people (§ 22 JArbSchG).
Water hazard class: WGK 1 (in accordance with German regulation AwSV)
VOC content according to EU directive 2010/75: 1.6 %

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment has not been carried out.

SECTION 16. Other information

Indication of changes

Revised sections: 2, 3, 15, 16

Hazard statements referred to in Section 2 and 3 i.a.w. Regulation (EC) No 1272/2008

Met. Corr. 1, H290 = Corrosive to metals, category 1, May be corrosive to metals.
Acute Tox. 4, H302 = Acute toxicity, category 4, Harmful if swallowed.
Skin Corr. 1A/B/C, H314 = Skin corrosion / irritation, category 1A/B/C, Causes severe skin burns and eye damage.
Skin Irrit. 2, H315 = Skin corrosion / irritation, category 2, Causes skin irritation.
Eye Irrit. 2, H319 = Eye damage / irritation, category 2, Causes serious eye irritation.

Key literature references and sources for data

REACH Regulation (EC) No. 1907/2006
CLP Regulation (EC) No. 1272/2008

All data were taken from the safety data sheets of our sub-suppliers, where available. Missing data were taken from the Substance Database GESTIS of the Institute for Occupational Safety and Health of the German statutory accident insurance or from the database of the European Chemicals Agency (ECHA).

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Legend

ABEK	Filter designation
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE mix	Acute Toxicity Estimates for mixtures
AVV	European waste list regulation
AwSV	Ordinance on systems for handling water-polluting substances
Butyl	Butyl rubber
CAS	(Registration number) Chemical Abstracts Service
CLP	Regulation on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenicity, mutagenicity, reproductive toxicity
CR	Chloroprene rubber
EC50	Median effective concentration
EG	(Registration number) European Union
ErC50	Median effective concentration
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FKM	Fluorocarbon rubber
GISCODE	Labelling system of the professional associations in the construction industry
IATA-DGR	International Air Transport Association - Dangerous Goods Regulations
IBC	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO-TI	Technical Instructions For The Safe Transport of Dangerous Goods by Air
IMDG	International Maritime Dangerous Goods
LC50	Lethal concentration of a substance leading to the death of 50% of the exposed organisms
LD50	Lethal dose of a substance that leads to death of 50% of the organisms exposed to it
MARPOL	International Convention for the Prevention of Pollution from Ships
NBR	Acrylonitrile butadiene rubber
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
NR	Natural rubber
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulating, toxic
PET	Polyethylene terephthalate
PTFE	Polytetrafluoroethylene
PVC	Polyvinyl chloride
REACH	Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Convention concerning International Carriage by Rail
TRGS	Technical Rules for Hazardous Substances
UN	United Nations
US-EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
vPvB	Very persistent, very bioaccumulating
WGK	Water hazard class

Further information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal.