

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

1.1 Product identifier

ERM-AE143, -AE144, -AE145

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

1.2.1 Relevant uses

Isotopic reference material

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Bundesanstalt für Materialforschung und -prüfung
Division 1.1, Dr. Jochen Vogl
Unter den Eichen 87
12205 Berlin / GERMANY
Phone +49 (0)30 8104-0
Fax +49 (0)30 8104-7-2222
Homepage www.bam.de
E-mail info@bam.de

Address enquiries to

Technical information

info@bam.de

Safety Data Sheet

sdb@chemiebuero.de

1.4 Emergency telephone number

Advisory body

Germany (in German language):

+49 (0) 30 3068 6700

Giftnotruf Berlin

Charité-Universitätsmedizin Berlin - Campus Benjamin Franklin

Hindenburgdamm 30, 12203 Berlin

Outside Germany:

To avoid language problems and in case of nonavailability it is recommended to contact your national poison control centre.

A list of national poison control centres inside the EU can be obtained at:

http://ec.europa.eu/growth/sectors/chemicals/poison-centres/index_en.htm

For poison centres outside the EU the information is listed at the world directory of poison control centres at the WHO homepage:

http://www.who.int/gho/phe/chemical_safety/poisons_centres/en/

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture [REGULATION (EC) No 1272/2008]

Skin Irrit. 2: H315 Causes skin irritation.

Eye Irrit. 2: H319 Causes serious eye irritation.

Met. Corr. 1: H290 May be corrosive to metals.

2.2 Label elements

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

Hazard pictograms



Signal word

WARNING

Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H290 May be corrosive to metals.

Precautionary statements

P280 Wear protective gloves / eye protection / face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+P352 IF ON SKIN: Wash with plenty of water.

P337+P313 If eye irritation persists: Get medical advice / attention.

2.3 Other hazards

Environmental hazards	Does not contain any PBT or vPvB substances.
Other hazards	Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
1 - < 5	Nitric acid CAS: 7697-37-2, EINECS/ELINCS: 231-714-2, EU-INDEX: 007-004-00-1 GHS/CLP: Ox. Liq. 2: H272 - Skin Corr. 1A: H314 SCL [%]: >= 99: Ox. Liq. 2: H272, >=65 - <99: Ox. Liq. 3: H272, >= 70: Acute Tox. 1: H330, <= 70: Acute Tox. 3: H331, >= 20: Skin Corr. 1A: H314, >=5 - <20: Skin Corr. 1B: H314
< 0.1	Magnesium nitrate hexahydrate CAS: 13446-18-9, EINECS/ELINCS: 233-826-7 GHS/CLP: Eye Irrit. 2: H319

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	Take off contaminated clothing and wash before reuse.
Inhalation	Ensure supply of fresh air. In the event of symptoms seek medical treatment.
Skin contact	When in contact with the skin, clean 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.
Ingestion	Rinse out mouth and give plenty of water to drink. Seek medical advice immediately. Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to your doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.
Extinguishing media that must not be used	Full water jet

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.
Nitrogen oxides (NOx).

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective clothing.
Ensure adequate ventilation.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. acid binder).
Dispose of absorbed material in accordance with the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

The normal safety precautions for handling chemicals must be observed.

Do not eat, drink or smoke when using this product.
Wash hands before breaks and after work.
Use barrier skin cream.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.
Do not store together with food and animal food/diet.
Do not store with alkalis.
Keep container tightly closed.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Substance
Nitric acid
CAS: 7697-37-2, EINECS/ELINCS: 231-714-2, EU-INDEX: 007-004-00-1
Short-term exposure (15-minute): 1 mg/m ³ , 2,6

Ingredients with occupational exposure limits to be monitored (EU)

Substance / EC LIMIT VALUES
Nitric acid
CAS: 7697-37-2, EINECS/ELINCS: 231-714-2, EU-INDEX: 007-004-00-1
Short-term (15-minute): 1 ppm, 2,6 mg/m ³

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Safety glasses. (EN 166:2001)
Hand protection	0,4 mm; Nitrile rubber, >240 min (EN 374-1/-2/-3). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Acid-resistant protective and long-sleeved work clothing.
Other	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier. Avoid contact with eyes and skin.
Respiratory protection	Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, filter P2. (DIN EN 143)
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Comply with applicable environmental regulations limiting discharge to air, water and soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colourless
Odor	odourless
Odour threshold	not applicable
pH-value	< 1
pH-value [1%]	No information available.
Boiling point [°C]	No information available.
Flash point [°C]	not applicable
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not applicable
Density [g/cm ³]	1.01 (20 °C / 68,0 °F)
Relative density	not determined
Bulk density [kg/m ³]	not applicable
Solubility in water	miscible
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	No information available.
Kinematic viscosity	No information available.
Relative vapour density	No information available.
Evaporation speed	No information available.
Melting point [°C]	ca. 0
Auto-ignition temperature	not self-igniting
Decomposition temperature [°C]	not applicable
Particle characteristics	not applicable

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

Reactions with alkalis (lyes).

10.4 Conditions to avoid

No dangerous reactions known if used as directed.

10.5 Incompatible materials

Alkalies
Base metal

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Product
ATE-mix, oral, Based on the available information, the classification criteria are not fulfilled.
Substance
Magnesium nitrate hexahydrate, CAS: 13446-18-9
LD50, oral, Rat, 5440 mg/kg
NOAEL, oral, Rat, >= 1500 mg/kg/day (subakut)

Acute dermal toxicity

Product
ATE-mix, dermal, Based on the available information, the classification criteria are not fulfilled.

Acute inhalational toxicity

Product
ATE-mix, inhalative, Based on the available information, the classification criteria are not fulfilled.
Substance
Nitric acid, CAS: 7697-37-2
LC50, inhalative, Rat, > 2,65 mg/L (4h) (OECD 403)

Serious eye damage/irritation	Irritant Based on the available information, the classification criteria are fulfilled. Calculation method
Skin corrosion/irritation	Irritant Based on the available information, the classification criteria are fulfilled. Calculation method
Respiratory or skin sensitisation	Based on the available information, the classification criteria are not fulfilled.
Specific target organ toxicity — single exposure	Based on the available information, the classification criteria are not fulfilled.
Specific target organ toxicity — repeated exposure	Based on the available information, the classification criteria are not fulfilled.
Mutagenicity	Based on the available information, the classification criteria are not fulfilled.
Reproduction toxicity	Based on the available information, the classification criteria are not fulfilled.
Carcinogenicity	Based on the available information, the classification criteria are not fulfilled.
Aspiration hazard	Based on the available information, the classification criteria are not fulfilled.
General remarks	

The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. Toxicological data of complete product are not available.

SECTION 12: Ecological information

12.1 Toxicity

Substance
Nitric acid, CAS: 7697-37-2
LC50, (48h), Crustacea, 180 mg/L

12.2 Persistence and degradability

Behaviour in environment compartments not determined

Behaviour in sewage plant not determined

Biological degradability not applicable

12.3 Bioaccumulative potential

not applicable

12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

Do not discharge product unmonitored into the environment.
Ecological data of complete product are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Dispose of as hazardous waste.

Waste no. (recommended)

160506*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended)

150110* packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

Transport by land according to ADR/RID 3264

Inland navigation (ADN) 3264

Marine transport in accordance with IMDG 3264

Air transport in accordance with IATA 3264

14.2 UN proper shipping name

Transport by land according to ADR/RID Corrosive liquid, acidic, inorganic, n.o.s. (contains Nitric acid)

- Classification Code C1

- Label



- ADR LQ 5 l

- ADR 1.1.3.6 (8.6) Transport category (tunnel restriction code) 3 (E)

Inland navigation (ADN) Corrosive liquid, acidic, inorganic, n.o.s. (contains Nitric acid)

- Classification Code C1

- Label



Marine transport in accordance with IMDG Corrosive liquid, acidic, inorganic, n.o.s. (contains Nitric acid)

- EMS F-A, S-B

- Label



- IMDG LQ 5 l

Air transport in accordance with IATA Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, solution)

- Label



14.3 Transport hazard class(es)

Transport by land according to ADR/RID 8

Inland navigation (ADN) 8

Marine transport in accordance with IMDG 8

Air transport in accordance with IATA 8

14.4 Packing group

Transport by land according to ADR/RID III

Inland navigation (ADN) III

Marine transport in accordance with IMDG III

Air transport in accordance with IATA III

14.5 Environmental hazards

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS 2008/98/EC 2000/532/EC; 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014

TRANSPORT-REGULATIONS ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2021)

NATIONAL REGULATIONS (GB): EH40/2005 Workplace exposure limits (Second edition, published December 2011).

- Observe employment restrictions for people Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.

- VOC (2010/75/CE) 0 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H319 Causes serious eye irritation.

H272 May intensify fire; oxidiser.

H314 Causes severe skin burns and eye damage.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ATE = acute toxicity estimate
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
EL50 = Median effective loading
ELINCS = European List of Notified Chemical Substances
EmS = Emergency Schedules
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform Chemical Information Database
IVIS = In vitro irritation score
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
LL50 = Median lethal loading
LQ = Limited Quantities
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
STP = Sewage Treatment Plant
TLV@TWA = Threshold limit value – time-weighted average
TLV@STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure

Skin Irrit. 2: H315 Causes skin irritation. (Calculation method)
Eye Irrit. 2: H319 Causes serious eye irritation. (Calculation method)
Met. Corr. 1: H290 May be corrosive to metals. (Bridging principle "Batching")

Modified position

SECTION 10 been added: Base metal
SECTION 11 been added: Toxicological data of complete product are not available.
SECTION 12 been added: Spillages may penetrate the soil causing ground water contamination.
SECTION 12 been added: Based on all available information not to be classified as PBT or vPvB respectively.
SECTION 12 been added: Ecological data of complete product are not available.
SECTION 13 been added: Dispose of as hazardous waste.



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