

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

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Safety Data Sheet

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1.4 Emergency telephone number
Advisory body

+49 (0)30 30686700
Giftnotruf Berlin
Charité-Universitätsmedizin Berlin
Campus Benjamin Franklin
Hindenburgdamm 30
12203 Berlin
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.

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2.3 Other hazards

Human health dangers	Frequent persistent contact with the skin can cause skin irritation.
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

Product-type:

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. 3: H272 - Skin Corr. 1A: 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	Seek medical advice immediately. Induce the patient to vomit of his own accord only if fully conscious. Rinse out mouth and give plenty of water to drink.

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 the 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 alkalies.

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. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
Eye protection	Safety glasses. (EN 166:2001)
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. 0,11mm Nitrile rubber, >240 min (EN 374-1/-2/-3).
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

Form	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/ml]	1.01 (20 °C / 68,0 °F)
Bulk density [kg/m ³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	No information available.
Viscosity	No information available.
Relative vapour density determined in air	No information available.
Evaporation speed	No information available.
Melting point [°C]	ca. 0
Autoignition temperature [°C]	not self-igniting
Decomposition temperature [°C]	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

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Substance
Magnesium nitrate hexahydrate, CAS: 13446-18-9
LD50, oral, Rat: 5440 mg/kg.
NOAEL, oral, Rat: >= 1500 mg/kg/day (subakut).
Nitric acid, CAS: 7697-37-2
LC50, inhalative, Rat: > 2,65 mg/L (4h) (OECD 403).

Serious eye damage/irritation	Irritant Calculation method
Skin corrosion/irritation	Irritant 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.

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

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material c 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

Coordinate disposal with the disposal contractor/authorities if necessary.

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*

SECTION 14: Transport information

14.1 UN 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 I

- 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 I

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 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

EEC-REGULATIONS 1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2016/2037/EC); (EU) 2015/830; (EU) 2016/131; (EU) 517/2014

TRANSPORT-REGULATIONS DOT-Classification, ADR (2017); IMDG-Code (2017, 38. Amdt.); IATA-DGR (2018).

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

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SECTION 16: Other information**16.1 Hazard statements
(SECTION 03)**

H319 Causes serious eye irritation.
 H314 Causes severe skin burns and eye damage.
 H272 May intensify fire; oxidiser.

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
 ELINCS = European List of Notified Chemical Substances
 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
 LC50 = Lethal concentration, 50%
 LD50 = Median lethal dose
 LC0 = lethal concentration, 0%
 LOAEL = lowest-observed-adverse-effect level
 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 14 been added: Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, solution)
 SECTION 14 deleted: Nitric acid
 SECTION 14 been added: Corrosive liquid, acidic, inorganic, n.o.s. (contains Nitric acid)
 SECTION 14 deleted: Nitric acid
 SECTION 14 been added: Nitric acid
 SECTION 14 deleted: Nitric acid

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