

**SAFETY DATA SHEET**

**FOR**

**“ERM-AE142”**

according to Regulation (EC) No 1907/2006

Version number 4

Issue Date: 23.10.2018

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**Section 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

Product name: ERM-AE142  
Product information: Lead aqueous solution in 6 % nitric acid (1 mol/L) with an approximate Pb mass fraction of 100 µg/g

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

Reference sample to be used within the framework of CCQM-K98/P134 for the isotopic analysis of Pb. Any other use is discouraged.

**1.3. Details of the supplier of the safety data sheet**

Supplier / Producer: Bundesanstalt für Materialforschung und -prüfung (BAM)  
Unter den Eichen 87, 12205 Berlin, Germany  
Phone: +49 (0)30 8104-0  
Fax: +49 (0)30 8104-7-2222  
Homepage: [www.bam.de](http://www.bam.de)  
E-Mail: [info@bam.de](mailto:info@bam.de)  
Contact person: Dr. Jochen Vogl, e-mail: [jochen.vogl@bam.de](mailto:jochen.vogl@bam.de)  
Issuing person: Dr. Jochen Vogl, e-mail: [jochen.vogl@bam.de](mailto:jochen.vogl@bam.de)

**1.4. Emergency telephone number**

Emergency telephone: +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](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/](http://www.who.int/gho/phe/chemical_safety/poisons_centres/en/)

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**2. Hazards identification**

**2.1. Classification of the substance or mixture**

*Classification (Regulation (EC) No 1272/2008)*

Skin irritation, Category 1B H314: Causes severe skin burns and eye damage

*Classification (67/548/EEC or 1999/45/EC)*

C R34: Causes burns

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***Pb(NO<sub>3</sub>)<sub>2</sub> with c < 0.05% requires no classification. The classification therefore derives from nitric acid with c = 6 %.***

**2.2. Label elements**

**Labelling according to Regulation (EC) No 1272/2008:**

*Hazard pictogram:*



*Signal word:*

Danger

*Hazard statements:*

H314 Causes severe skin burns and eye damage.

*Precautionary statements:*

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.  
P363 Wash contaminated clothing before reuse  
P321 Specific treatment (see ... on this label)

Restricted to professional users.

**Labelling according to Directive 67/548/EEC or 1999/45EC**

Symbol(s):



C, corrosive

R-phrases: 34 Causes burns.

S-phrases: 23 - 26 - 36 - 45

For the full text of the H-Statements as well as S- and R-phrases mentioned in this Section, see Section 16.

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**Section 3: Composition/information on ingredients**

**3.1. Substances**

Chemical nature: Lead nitrate in nitric acid solution.

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**Hazardous components (Regulation (EC) No 1272/2008)**

*Chemical Name (Concentration)*

CAS-No.	EC-No./Registration number	Index-No.	Classification
<i>Nitric acid (&gt;= 5% -&lt;20 %)</i> 7697-37-2	231-714-2	007-004-00-1	Skin corrosion, Category 1A, H314 Oxidising liquid, Category 3, H272
<i>Lead (II) nitrate (&gt; 0.005% - &lt; 0.05 %)</i> 10099-74-8	233-245-9	082-001-00-6	Acute toxicity, Category 4, H302, H332 Reprod. toxicity, Category 1A, H360Df Aquatic acute, Category 1, H400 Aquatic chronic, Category 1, H410 STOT RE, Category 1, H373

**Hazardous components (1999/45/EC)**

*Chemical Name (Concentration)*

CAS-No.	EC-No./Registration Number	Index-No.	Classification
<i>Nitric acid (&gt;= 5% -&lt;20 %)</i> 7697-37-2	231-714-2	007-004-00-1	O; R8 C; R35
<i>Lead(II) nitrate (&gt; 0.005% - &lt; 0.05 %)</i> 10099-74-8	233-245-9	082-009-00-2	Harmful Cat.4 R20/R22 Reprod. Cat.1, R61 Reprod. Cat.3, R62 Aquatic acute Cat.1 R50/53 R33

For the full text of the R-phrases mentioned in this Section, see Section 16.

**3.2. Mixtures**

Does not apply. Product is prepared from substances under section 3.1. only.

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**Section 4: First aid measures**

**4.1. Description of first aid measures**

After inhalation: fresh air.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at the most). Consult a physician.

**4.2. Most important symptoms and effects, both acute and delayed**

Irritant effect

**4.3. Indication of any immediate medical attention and special treatment needed**

No information available

## **Section 5: Fire-fighting measures**

### **5.1. Extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. For this substance / mixture no restrictions on extinguishing media are known.

### **5.2. Special hazards arising from the substance or mixture**

Not combustible.  
Ambient fire may liberate hazardous vapours.

### **5.3. Advice for fire fighters**

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

#### *Further information*

Prevent fire extinguishing water from contamination surface water or the ground water system.

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## **Section 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergence procedures**

Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation.  
Wear protective glasses and gloves. See section 8

### **6.2. Environmental precautions**

Do not empty into drains.

### **6.3. Methods and materials for containment and cleaning up**

Take up with liquid-absorbent and neutralizing material. Forward for disposal. Clean up affected area.

### **6.4. Reference to other sections**

Information on disposal see section 13.

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## **Section 7: Handling and storage**

### **7.1. Precautions for safe handling**

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols. Observe label precautions. Wear protective equipment, see section 8

Keep general hygiene standards for laboratories.

### **7.2. Conditions for safe storage, including any incompatibilities**

Keep container tightly closed. Keep in a well-ventilated place.

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### 7.3. Specific end use

Not applicable

## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

Components with workplace parameters

#### Components

Basis	Value	Threshold limits	Remarks
<i>Inorganic lead and its compounds</i>			
Directive 98/24/EC	Occupational exposure limit value 8h	0.15 mg/m <sup>3</sup> inhalable aerosol	8 h average
<i>Nitric acid (7697-37-2)</i>			
Directive 2006/15/EC	Short Term Exposure Limit (STEL):	1 ppm 2.6 mg/m <sup>3</sup>	15 minutes

#### Recommended monitoring procedures

Methods for measurement of the workplace atmosphere have to correspond to the requirements of standards DIN EN 482 and DIN EN 689.

### 8.2. Exposure controls

#### Personal protective equipment

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

#### Hand protection:

Full contact:	Glove material:	Latex or polyvinylchloride
	Glove thickness:	0.5 mm
	Break through time:	> 8 h
Splash contact:	Glove material:	Latex or polyvinylchloride
	Glove thickness:	0.5 mm
	Break through time:	> 8 h

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the resultant standard EN374.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves.

#### Eye protection:

Safety glasses

#### Hygiene measures:

Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

## **Section 9: Physical and chemical properties**

### **9.1. Information on basic physical and chemical properties**

Appearance	liquid
Colour	colourless
Odour	odourless
pH	< 1 at 20 °C, for the nitric acid component, literature data
Viscosity, dynamic	no data available
Boiling point	no data available
Ignition temperature	not combustible
Flash point	not required, inorganic substance
Flammability	not combustible
Danger of explosion	not explosive
Vapour pressure	no data available
Relative vapour density	no data available
Density	ca. 1,035 g/cm <sup>3</sup> at 20 °C, based on tabulated data for dilute nitric acid
Solubility/qualitative	water soluble
Water solubility	100%
Partition coefficient:	
n-octanol/water	not required for inorganic solutions
Auto-flammability	not applicable
Corrosion	no data available
Evaporation rate	no data available
Oxidizing properties	not oxidizing

### **9.2. Other information**

No other information available.

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## **Section 10: Stability and reactivity**

### **10.1. Reactivity**

No dangerous reactions known.

### **10.2. Chemical stability**

Stable under normal storage conditions (0 – 40 °C)

### **10.3. Possibility of hazardous reactions**

No dangerous reactions known.

### **10.4. Conditions to avoid**

No information available

**10.5. Incompatible materials**

*Increased reactivity with:*

oxidizable substances, organic solvent, Metals, metal alloys, Alkali metals, Alkaline earth metals, Ammonia, alkalines, acids

*Unsuitable working materials:*

Metals, metal alloys

**10.6. Hazardous decomposition products**

no information available

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**Section 11: Toxicological information**

**11.1. Information on toxicological effects**

*Acute oral toxicity:*

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

*Skin irritation:*

Causes skin irritation.

*Eye irritation:*

Causes serious eye irritation.

*Sensitization:*

Sensitization possible in predisposed persons.

*CMR effects:*

Carcinogenicity:

May cause cancer by inhalation.

*Further information:*

Quantitative data on the toxicity of this product are not available.

Handle in accordance with good industrial hygiene and safety practice.

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**Section 12: Ecological information**

**12.1. Toxicity**

No information available.

**12.2. Persistence and degradability**

No information available.

**12.3. Bio accumulative potential**

No information available.

**12.4. Mobility in soil**

No information available.

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**12.5. Results of PBT and vPvB assessment**

No information available.

**12.6. Other adverse effects**

No information available.

*Further information on ecology*

Do not allow to enter waters, waste water, or soil!

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**Section 13: Disposal considerations**

**13.1. Waste treatment methods**

*Product*

Chemicals must be disposed of in compliance with the respective national regulations.

*Packaging*

The product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

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**Section 14: Transport information**

**Land transport (ADR/RID)**

14.1. UN number	3264
14.2. UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID MORE THAN 5 % BUT NOT MORE THAN 20 %)
14.3. Transport hazard class(es)	8
14.4. Packing group	II
14.5. Environmental hazards	--
14.6. Special precautions for users	yes
Tunnel restriction code	E

**Inland waterway transport (ADN)**

Not relevant

**Air transport (IATA/ICAO)**

14.1. UN number	3264
14.2. UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID MORE THAN 5 % BUT NOT MORE THAN 20 %)
14.3. Transport hazard class(es)	8
14.4. Packing group	II
14.5. Environmental hazards	--
14.6. Special precautions for users	no



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### Sea transport (IMDG)

14.1. UN number	3264
14.2. UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID MORE THAN 5 % BUT NOT MORE THAN 20 %)
14.3. Transport hazard class(es)	8
14.4. Packing group	II
14.5. Environmental hazards	--
14.6. Special precautions for users	yes
EmS	F-A S-B
14.7. Transport in bulk according to Annex II of Marpol 73/78 and the IBC code	Not relevant

### Additional Transport Information:

Product ERM-AE142 fulfils the limits for excepted quantities according to ADR and IMDG:

ADR:	Limited quantity (LQ):	1 L	
	Excepted quantity (EQ) Code:	E2	maximum net quantity per inner packaging: 30 mL maximum net quantity per outer packaging: 500 mL
IMDG	Limited quantities (LQ):	1L	
	Excepted quantities (EQ):	E2	maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

## Section 15: Regulatory information

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

#### EU regulations

Major Accident Hazard	96/82/EC
Legislation	Directive 96/82/EC does not apply
Occupational restrictions	Take note of Directive 94/33/EC on the protection of young people at work

#### National legislation

Storage class (TRGS 510): 8B

### 15.2 Chemical safety assessment

For this product a chemical safety assessment is not required and therefore was not carried out.

## Section 16: Other information

Full text of H-Statements referred to under sections 2 and 3  
H272 May intensify fire; oxidizer

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H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H332	Harmful if inhaled
H360Df	May damage fertility or the unborn child. Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Full text of R-phrases referred to under sections 2 and 3

R8	Contact with combustible material may cause fire.
R20/22	Harmful by inhalation and if swallowed
R33	Danger of cumulative effects
R34	Causes burns
R35	Causes severe burns.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R61	May cause harm to the unborn child
R62	Possible risk of impaired fertility

Full text of S-phrases referred to under sections 2 and 3

S23	Do not breathe gas/fumes/vapor/spray
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36	Wear suitable protective clothing
S45	In case of accident or if you feel unwell seek medical advice immediately.

Release management: Regulation (EC) No 453/2010

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***The information contained herein is based on data considered to be accurate and on the present state of our knowledge. It characterizes the sample with regard to the appropriate safety precautions. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.***