

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**
**1.1 Product identifier**

**ERM-EF213**

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

Certified 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  
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**Safety Data Sheet**

[sdb@chemiebuero.de](mailto:sdb@chemiebuero.de)





**1.4 Emergency telephone number**
**Advisory body**

Germany (in German language):  
Giftnotruf Berlin +49-30-30686700; 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](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/)

**SECTION 2: Hazards identification**
**2.1 Classification of the substance or mixture [REGULATION (GB) CLP]**

Flam. Liq. 1: H224 Extremely flammable liquid and vapour.  
Skin Irrit. 2: H315 Causes skin irritation.  
Asp. Tox. 1: H304 May be fatal if swallowed and enters airways.  
Muta. 1B: H340 May cause genetic defects.  
Carc. 1B: H350 May cause cancer.  
STOT SE 3: H336 May cause drowsiness or dizziness.  
Repr. 2: H361 Suspected of damaging fertility or the unborn child.  
Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects.

## 2.2 Label elements

	The product is required to be labelled in accordance with regulation CLP.	
<b>Hazard pictograms</b>		
		
<b>Signal word</b>	DANGER	
<b>Contains:</b>	Gasoline Benzene	
<b>Hazard statements</b>	H224 Extremely flammable liquid and vapour. H315 Causes skin irritation. H304 May be fatal if swallowed and enters airways. H340 May cause genetic defects. H350 May cause cancer. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects. H361 Suspected of damaging fertility or the unborn child.	
<b>Precautionary statements</b>	P201 Obtain special instructions before use. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P260 Do not breathe mist / vapours / spray. P280 Wear protective gloves / protective clothing / eye protection / face protection. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER / doctor / ... P331 Do NOT induce vomiting. P308+P313 IF exposed or concerned: Get medical advice / attention. P403+P235 Store in a well-ventilated place. Keep cool. P273 Avoid release to the environment. P501 Dispose of contents/container in accordance with local/national regulation.	
<b>Special labelling</b>	Restricted to professional users.	

## 2.3 Other hazards

<b>Human health dangers</b>	May cause irritation of eye.
<b>Environmental hazards</b>	Does not contain any PBT or vPvB substances.
<b>Other hazards</b>	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
> 90	Gasoline CAS: 86290-81-5, EINECS/ELINCS: 289-220-8, EU-INDEX: 649-378-00-4 GHS/CLP: Asp. Tox. 1: H304 - Muta. 1B: H340 - Carc. 1B: H350 - Flam. Liq. 2: H225 - Skin Irrit. 2: H315 - Repr. 2: H361 - Aquatic Chronic 2: H411 - STOT SE 3: H336
0.1 - < 0.3	Benzene CAS: 71-43-2, EINECS/ELINCS: 200-753-7, EU-INDEX: 601-020-00-8 GHS/CLP: Flam. Liq. 2: H225 - Carc. 1A: H350 - Muta. 1B: H340 - STOT RE 1: H372 - Asp. Tox. 1: H304 - Eye Irrit. 2: H319 - Skin Irrit. 2: H315

**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

<b>General information</b>	Take off contaminated clothing and wash before reuse.
<b>Inhalation</b>	Ensure supply of fresh air. Get medical advice.
<b>Skin contact</b>	In case of contact with skin wash off immediately with soap and water. Consult a doctor if skin irritation persists.
<b>Eye contact</b>	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.
<b>Ingestion</b>	Rinse out mouth and give plenty of water to drink. Do not induce vomiting. Consult a doctor immediately. Keep airways free.

##### 4.2 Most important symptoms and effects, both acute and delayed

Irritant effects  
Drowsiness  
Vertigo  
Nausea, vomiting.

##### 4.3 Indication of any immediate medical attention and special treatment needed

If swallowed or in the event of vomiting, risk of product entering the lungs.  
Treat symptomatically.

#### SECTION 5: Fire-fighting measures

##### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	Foam, dry powder, water spray jet, carbon dioxide.
<b>Extinguishing media that must not be used</b>	Full water jet

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

Risk of formation of toxic pyrolysis products.  
Not combusted hydrocarbons.

##### 5.3 Advice for firefighters

Use self-contained breathing apparatus.  
Do not inhale explosion and/or combustion gases.  
Cool containers at risk with water spray jet.  
Heat causes increase in pressure and risk of bursting - Keep away from the container.  
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

Keep away from all sources of ignition.  
Ensure adequate ventilation.  
Use personal protective equipment (protective gloves, safety glasses, protective clothing).  
Use breathing apparatus if exposed to vapours/aerosol.  
Forms slippery surfaces with water.

##### 6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).  
Do not discharge into the drains/surface waters/groundwater.  
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

### 6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. general-purpose binder).  
Dispose of absorbed material in accordance within the regulations.

### 6.4 Reference to other sections

See SECTION 8+13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Use solvent-resistant equipment.  
Use only in well-ventilated areas.  
Avoid formation of aerosols.  
Avoid spilling or spraying in enclosed areas.

Keep away from open flames, hot surfaces and sources of ignition.  
Do not smoke.  
Vapours/spray can form an explosive mixture with air.  
Ignitable mixtures can be formed in the empty container.  
Use explosion-proofed equipment/fittings and non-sparking tools.

Do not eat, drink or smoke when using this product.  
Cloths contaminated with product should not be kept in trouser pockets.  
Take off contaminated clothing and wash before reuse.  
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.  
Use barrier skin cream.  
Contaminated work clothing should not be allowed out of the workplace.

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

Prevent penetration into the ground.  
Provide solvent-resistant and impermeable floor.  
Keep only in original container.

Do not store together with oxidizing agents.

Keep container tightly closed.  
Keep container in a well-ventilated place.  
Protect from heat/overheating and from sun.  
Keep in a cool place. Store in a dry place.  
Keep under lock and key. Should only be accessible to specialists or people authorized by them.

### 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
Benzene
CAS: 71-43-2, EINECS/ELINCS: 200-753-7, EU-INDEX: 601-020-00-8
Long-term exposure: 1 ppm, 3,25 mg/m <sup>3</sup> , Carc, Sk

## 8.2 Exposure controls

<b>Additional advice on system design</b>	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.
<b>Eye protection</b>	safety glasses (EN 166:2001)
<b>Hand protection</b>	0.7 mm; Nitrile rubber, >480 min (EN 374-1/-2/-3). Gloves (solvent-resistant). The details concerned are recommendations. Please contact the glove supplier for further information.
<b>Skin protection</b>	Solvent-resistant protective clothing (EN 340)
<b>Other</b>	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. Do not breathe vapour/spray. It is essential for pregnant women to avoid inhaling the product and not to let it come in contact with the skin.
<b>Respiratory protection</b>	In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection. Short term: filter apparatus, filter AX (DIN EN 14387).
<b>Thermal hazards</b>	See SECTION 7.
<b>Delimitation and monitoring of the environmental exposition</b>	Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	clear amber colour
Odor	solvent-like
Odour threshold	No information available.
pH-value	No information available.
pH-value [1%]	No information available.
Boiling point [°C]	25 - 220°C
Flash point [°C]	- 40°C
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	No information available.
Density [g/cm <sup>3</sup> ]	0.72 - 0.78
Relative density	not determined
Bulk density [kg/m <sup>3</sup> ]	not applicable
Solubility in water	immiscible
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	No information available.
Kinematic viscosity	< 1 mm <sup>2</sup> /s (20°C)
Relative vapour density	3/4
Evaporation speed	No information available.
Melting point [°C]	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature [°C]	No information available.
Particle characteristics	not applicable

### 9.2 Other information

none

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Evolution of flammable mixtures possible in air when heated above flash point and/or during spraying or misting.

### 10.2 Chemical stability

The product is stable under standard conditions.

### 10.3 Possibility of hazardous reactions

Evolution of flammable mixtures possible in air when heated above flash point and/or during spraying or misting.  
Uncleaned empty vessels may contain product gases which can form explosive mixtures with air.

### 10.4 Conditions to avoid

See SECTION 7.2.  
Strong heating.

### 10.5 Incompatible materials

See SECTION 10.3.

### 10.6 Hazardous decomposition products

Oxide of carbon (CO<sub>x</sub>)

## SECTION 11: Toxicological information

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

#### Acute oral toxicity

Substance
Benzene, CAS: 71-43-2
LD50, oral, Rat, > 930 mg/kg (Lit.)
Gasoline, CAS: 86290-81-5
LD50, oral, Rat, > 5000 mg/kg

#### Acute dermal toxicity

Substance
Benzene, CAS: 71-43-2
LD50, dermal, Rabbit, > 5000 mg/kg (Lit.)
Gasoline, CAS: 86290-81-5
LD50, dermal, Rabbit, > 2000 mg/kg

#### Acute inhalational toxicity

Substance
Benzene, CAS: 71-43-2
LC50, inhalative, Rat, 13700 ppm/4h(Lit.)
LC50, inhalative, Rat, 45 mg/l/4h(Lit.)
Gasoline, CAS: 86290-81-5
LC50, inhalative, Rat, > 5.61 mg/L (4h)

<b>Serious eye damage/irritation</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Skin corrosion/irritation</b>	Irritant Calculation method
<b>Respiratory or skin sensitisation</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Specific target organ toxicity — single exposure</b>	Vapours may cause drowsiness and dizziness. Calculation method
<b>Specific target organ toxicity — repeated exposure</b>	May cause damage to organs through prolonged or repeated exposure through inhalation. Calculation method
<b>Mutagenicity</b>	May cause genetic defects. Calculation method
<b>Reproduction toxicity</b>	Suspected of damaging the unborn child. Suspected of damaging fertility. Calculation method
<b>Carcinogenicity</b>	May cause cancer. Calculation method
<b>Aspiration hazard</b>	May be fatal if swallowed and enters airways. Calculation method
<b>General remarks</b>	May cause irritation of respiratory organs. May cause irritation of eye. Disturbances of the central nervous system. Has a degreasing effect on the skin.  Toxicological data of complete product are not available. 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.

### 11.2 Information on other hazards

<b>Endocrine disrupting properties</b>	Contains no ingredients with endocrine-disrupting properties.
<b>Other information</b>	none



## SECTION 12: Ecological information

### 12.1 Toxicity

Substance
Benzene, CAS: 71-43-2
LC50, (96h), Pimephales promelas, 15.1 mg/l (Lit.)
LC50, (96h), Oncorhynchus mykiss, 5.3 mg/l (Lit.)
EC50, (48h), Daphnia magna, 10 mg/l (Lit.)
EC50, (72h), Selenastrum capricornutum, 29 mg/l (Lit.)
EC50, (24h), Daphnia magna, 18 mg/l (Lit.)
Gasoline, CAS: 86290-81-5
LC50, (96h), Salmo gairdneri, 5.3 mg/L
EC50, (72h), Selenastrum capricornutum, 29 mg/L
EC50, (48h), Daphnia magna, 10 mg/L

### 12.2 Persistence and degradability

<b>Behaviour in environment compartments</b>	No information available.
<b>Behaviour in sewage plant</b>	No information available.
<b>Biological degradability</b>	No information available.

### 12.3 Bioaccumulative potential

No evidence for bioaccumulation potential.

### 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

Contains no ingredients with endocrine-disrupting properties.

### 12.7 Other adverse effects

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

### 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.  
Coordinate disposal with the 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\* 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** 3295

**Inland navigation (ADN)** 3295

**Marine transport in accordance with IMDG** 3295

**Air transport in accordance with IATA** 3295

#### 14.2 UN proper shipping name

Transport by land according to ADR/RID Hydrocarbons, liquid, n.o.s.

- Classification Code F1

- Label



- ADR LQ 5 l

- ADR 1.1.3.6 (8.6) Transport category (tunnel restriction code) 1 (D/E)

Inland navigation (ADN) Hydrocarbons, liquid, n.o.s.

- Classification Code F1

- Label



Marine transport in accordance with IMDG Hydrocarbons, liquid, n.o.s. (Low boiling point naphtha - unspecified)

- EMS F-E, S-D

- Label



- IMDG LQ 0.5 l

Air transport in accordance with IATA Hydrocarbons, liquid, n.o.s. (Low boiling point naphtha - unspecified)

- Label



#### 14.3 Transport hazard class(es)

Transport by land according to ADR/RID 3 (N)

Inland navigation (ADN) 3 (N)

Marine transport in accordance with IMDG 3

Air transport in accordance with IATA 3

#### 14.4 Packing group

Transport by land according to ADR/RID I

Inland navigation (ADN) I

Marine transport in accordance with IMDG I

Air transport in accordance with IATA I

#### 14.5 Environmental hazards

Transport by land according to ADR/RID	yes
Inland navigation (ADN)	yes
Marine transport in accordance with IMDG	MARINE POLLUTANT
Air transport in accordance with IATA	yes

#### 14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

#### 14.7 Maritime transport in bulk according to IMO instruments

No information available.

### 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 (2022)
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.
- Observe employment restrictions for people	Observe employment restrictions for young people. Observe employment restrictions for mothers-to-be and nursing mothers.
- VOC (2010/75/CE)	ca. 100%

#### 15.2 Chemical safety assessment

### SECTION 16: Other information

#### 16.1 Hazard statements (SECTION 3)

H319 Causes serious eye irritation.  
H372 Causes damage to organs through prolonged or repeated exposure.  
H336 May cause drowsiness or dizziness.  
H411 Toxic to aquatic life with long lasting effects.  
H361 Suspected of damaging fertility or the unborn child.  
H315 Causes skin irritation.  
H225 Highly flammable liquid and vapour.  
H350 May cause cancer.  
H340 May cause genetic defects.  
H304 May be fatal if swallowed and enters airways.

**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**

Flam. Liq. 1: H224 Extremely flammable liquid and vapour. (On basis of test data)  
 Skin Irrit. 2: H315 Causes skin irritation. (Calculation method)  
 Asp. Tox. 1: H304 May be fatal if swallowed and enters airways. (Calculation method)  
 Muta. 1B: H340 May cause genetic defects. (Calculation method)  
 Carc. 1B: H350 May cause cancer. (Calculation method)  
 STOT SE 3: H336 May cause drowsiness or dizziness. (Calculation method)  
 Repr. 2: H361 Suspected of damaging fertility or the unborn child. (Calculation method)  
 Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects. (Calculation method)

**Modified position**

SECTION 2 been added: H361 Suspected of damaging fertility or the unborn child.  
 SECTION 2 been added: Repr. 2  
 SECTION 11 been added: Contains no ingredients with endocrine-disrupting properties.  
 SECTION 11 been added: May be fatal if swallowed and enters airways.  
 SECTION 11 been added: Suspected of damaging fertility.  
 SECTION 11 been added: Suspected of damaging the unborn child.  
 SECTION 12 been added: Contains no ingredients with endocrine-disrupting properties.  
 SECTION 15 been added: Chemikalien-Verbotsverordnung - pay attention ChemVerbotsV.



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