



Be Right™

# SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Issue Date 02-Apr-2005

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Version 5.51

## Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

**Product Code(s)** LCK311-1  
**Product Name** LCK 311 Chlorid/Chloride/Chlorure, Sample cuvette, 1/2  
**Unique Formula Identifier (UFI)** FC05-XFJN-K806-9EWY

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

**Recommended Use** Restricted to professional users. Water Analysis. Determination of chlorine.  
**Uses advised against** Consumer use

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

#### **Supplier**

HACH LANGE GmbH  
Willstätterstr. 11  
D-40549 Düsseldorf  
Tel: +49 (0)211 5288-383  
sds@hach.com

Responsible country contact:

HACH UK  
Laser House  
Ground Floor, Suite B  
Waterfront Quay, Salford Quays  
GB - Manchester, M50 3XW  
Tel. +44 (0) 161 872 1487  
info-uk@hach.com

HACH Ireland  
Unit 34 GB Business Park  
Little Island  
IRL-Co. Cork  
T45 H681  
Tel. +353 (0)146 02 522  
info-ie@hach.com

### 1.4. Emergency telephone number

UK: Chemtrec: +44 20 3807 3798  
IE: National Poisons Information Centre (NPIC) 01 809 2566 (24/7)

## Section 2: HAZARDS IDENTIFICATION

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

Classification according to Regulation (EC) No. 1272/2008 [CLP]

<b>Flammable liquids</b>	Category 3 - (H226)
<b>Acute toxicity - Oral</b>	Category 3 - (H301)
<b>Acute toxicity - Dermal</b>	Category 3 - (H311)
<b>Acute toxicity - Inhalation (Vapours)</b>	Category 3 - (H331)
<b>Skin corrosion/irritation</b>	Category 1 Sub-category B - (H314)
<b>Serious eye damage/eye irritation</b>	Category 1 - (H318)
<b>Specific target organ toxicity — single exposure</b>	Category 1 - (H370)
<b>Chronic aquatic toxicity</b>	Category 2 - (H411)

**2.2. Label elements**

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Contains Methanol, Nitric acid 6%, Ferric nitrate nonahydrate

**Signal word**

Danger

**Hazard statements**

H226 - Flammable liquid and vapour  
 H301 - Toxic if swallowed  
 H311 - Toxic in contact with skin  
 H314 - Causes severe skin burns and eye damage  
 H331 - Toxic if inhaled  
 H370 - Causes damage to organs  
 H411 - Toxic to aquatic life with long lasting effects

**Precautionary statements**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
 P260 - Do not breathe dust/fume/gas/mist/vapours/spray  
 P273 - Avoid release to the environment  
 P280 - Wear protective gloves and eye/face protection  
 P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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  
 P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor  
 P391 - Collect spillage  
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

**2.3. Other hazards**

No information available.

**PBT & vPvB**

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT)  
 This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances**

Not applicable

**3.2 Mixtures**

Chemical name	CAS No. EC No. Index No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Water	7732-18-5 231-791-2 -	40 - 50%	Not classified		-	-
Methanol	67-56-1 200-659-6 (603-001-00-X) 603-001-00-X	40 - 50%	Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 STOT SE 1 - H370	STOT SE 1 :H370: C>=10% STOT SE 2 :H371: 3%<=C<10%	-	-
Nitric acid	7697-37-2 231-714-2 (007-004-00-1) (007-030-00-3) (078-012-00-0) 007-030-00-3	3 - 7%	Ox. Liq. 3 - H272 Met. Corr. 1 - H290 Skin Corr. 1A - H314 Eye Dam. 1 - H318 Acute Tox. 3 - H331	Ox. Liq. 2 :H272: C>=99% Ox. Liq. 3 :H272: 70%<=C<99% Ox. Liq. 3 :H272: C>=65% Skin Corr. 1A :H314: C>=20% Skin Corr. 1B :H314: 5%<=C<20%	-	-
Ferric nitrate	10421-48-4 233-899-5 -	<1%	Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H336		-	-
Thiocyanic acid, mercury(2+) salt	592-85-8 209-773-0 080-002-00-6 080-004-00-7	<0.1%	Acute Tox. 2 - H300 Acute Tox. 1 - H310 Acute Tox. 2 - H330 STOT RE 2 -	STOT RE 2 :H373: C>=0.1%	-	-

Chemical name	CAS No. EC No. Index No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
			H373 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

Chemical name	REACH registration number
Ferric nitrate	01-2119978293-27-xxxx
Methanol	01-2119433307-44-xxxx
Nitric acid	01-2119487297-23-xxxx

**Full text of H- and EUH-phrases: see section 16**

Acute Toxicity Estimate No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Ferric nitrate 10421-48-4	3250 mg/kg	None reported	None reported	None reported	None reported
Thiocyanic acid, mercury(2+) salt 592-85-8	46 mg/kg	None reported	None reported	None reported	None reported

## Section 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

**General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Inhalation**

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention. Immediate medical attention is required.

**Eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention. Remove contact lenses, if present and easy to do. Continue rinsing.

**Skin contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.

**Ingestion**

Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

**Self-protection of the first aider** Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not breathe vapour or mist.

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

**Symptoms** Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

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

**Note to doctors** Treat symptomatically.

### **Section 5: FIREFIGHTING MEASURES**

#### **5.1. Extinguishing media**

**Suitable Extinguishing Media** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Alcohol resistant foam.

**Unsuitable extinguishing media** CAUTION: Use of water spray when fighting fire may be inefficient.

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

**Specific hazards arising from the chemical** Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.

**Hazardous combustion products** No information available.

#### **5.3. Advice for firefighters**

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**Additional information** Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

### **Section 6: ACCIDENTAL RELEASE MEASURES**

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

**Personal precautions** Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Attention! Corrosive material. Do not breathe vapour or mist.

**For emergency responders** Use personal protection recommended in Section 8.

#### **6.2. Environmental precautions**

**Environmental precautions** Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if

safe to do so. Prevent product from entering drains. Should not be released into the environment. Do not allow to enter into soil/subsoil.

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

<b>Methods for containment</b>	Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
<b>Methods for cleaning up</b>	Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.
<b>Prevention of secondary hazards</b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections

<b>Reference to other sections</b>	See section 8 for more information. See section 13 for more information.
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## **Section 7: HANDLING AND STORAGE**

### 7.1. Precautions for safe handling

<b>Advice on safe handling</b>	Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash it before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Do not breathe vapour or mist.
<b>General hygiene considerations</b>	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapour or mist.

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

<b>Storage Conditions</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Keep out of the reach of children. Protect from moisture. Store away from other materials. Store locked up. Accessible only for authorized persons.
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### 7.3. Specific end use(s)

<b>Specific use(s)</b>	Analytical reagent. Water Analysis.
<b>Risk Management Methods (RMM)</b>	The information required is contained in this Safety Data Sheet.

## **Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

### 8.1. Control parameters

**Exposure Limits**

Chemical name	European Union	United Kingdom	Ireland
Methanol 67-56-1	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> Sk*	TWA: 200 ppm TWA: 266 mg/m <sup>3</sup> STEL: 250 ppm STEL: 333 mg/m <sup>3</sup> Sk*	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 600 ppm STEL: 780 mg/m <sup>3</sup> Sk*
Nitric acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>
Ferric nitrate 10421-48-4	-	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>
Thiocyanic acid, mercury(2+) salt 592-85-8	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup> STEL: 0.06 mg/m <sup>3</sup> STEL: 15 mg/m <sup>3</sup> Sk*	TWA: 5 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup> STEL: 15 mg/m <sup>3</sup> STEL: 0.06 mg/m <sup>3</sup>

Chemical name	European Union	United Kingdom	Ireland
Methanol 67-56-1	-	-	15 mg/L (urine - Methanol end of shift)

**Information on monitoring procedures**

Refer to European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) or equivalent national standard(s).

**Derived No Effect Level (DNEL)** No information available

**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls****Engineering controls**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Personal protective equipment  
Eye/face protection**

Wear safety glasses with side shields (or goggles).

**Hand protection**

Wear suitable gloves. Impervious gloves. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374-1:2016 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III acco.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Short term	Wear protective nitrile rubber gloves	0,20 mm	>30 minutes
Long term (repeated)	Wear protective Viton™ gloves	0,70 mm	>480 minutes

**Skin and body protection**

Wear suitable protective clothing. Long sleeved clothing. Antistatic boots.

**Respiratory protection**

Ensure adequate ventilation. No protective equipment is needed under normal use

conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**Recommended filter type:** ABEK-P3.

**General hygiene considerations** Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapour or mist.

**Environmental exposure controls** Do not allow into any sewer, on the ground or into any body of water.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

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

**Physical state** Liquid

**Colour** beige  
red brown

**Odour** Odourless

**Odour threshold** No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Molecular weight</b>	No data available	
<b>pH</b>	7	@ 20 °C
<b>Melting point / freezing point</b>	No data available	
<b>Initial boiling point and boiling range</b>	65 °C / 149 °F	
<b>Evaporation rate</b>	No data available	
<b>Vapour pressure</b>	96.01 mm Hg / 12.8 kPa at 20 °C / 68 °F	
<b>Relative vapor density</b>	No data available	
<b>Partition coefficient</b>	No data available	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	No data available	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No information available	
<b>Dynamic viscosity</b>	No data available	
<b>Kinematic viscosity</b>	No data available	
<b>Relative density</b>	0.92 g/mL	@ 20 °C

### Solubility(ies)



**Water solubility**

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Completely soluble	> 10000 mg/L	25 °C / 77 °F

**Solubility in other solvents**

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
None reported	No information available	No data available	No information available

**Metal Corrosivity**

Steel Corrosion Rate No data available  
 Aluminum Corrosion Rate No data available

**Explosive properties**

Upper explosion limit No data available  
 Lower explosion limit No data available

**Flammable properties**

Flash point = 24 °C / 75.2 °F  
 Method

**Flammability**

Upper flammability limit: No data available  
 Lower flammability limit No data available

**Oxidising properties**

No data available.

**Bulk density**

No data available

**9.2. Other information**

No information available.

**Section 10: STABILITY AND REACTIVITY****10.1. Reactivity**

Reactivity No information available.

**10.2. Chemical stability**

Stability Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

Possibility of hazardous reactions None under normal processing.

Hazardous polymerisation Hazardous polymerisation does not occur.

**10.4. Conditions to avoid**

Conditions to avoid Heat, flames and sparks. Exposure to air or moisture over prolonged periods. Excessive heat.

**10.5. Incompatible materials**

Incompatible materials Acids. Bases. Oxidising agent.

**10.6. Hazardous decomposition products**

**Hazardous Decomposition Products** Thermal decomposition can lead to release of irritating and toxic gases and vapours.

**Section 11: TOXICOLOGICAL INFORMATION****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

Based on available data, the classification criteria are not met

Mixture No data available.

Substance No data available.

**Oral Exposure Route:**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ferric nitrate	Rat LD <sub>50</sub>	3250 mg/kg	None reported	None reported	RTECS
Thiocyanic acid, mercury(2+) salt	Rat LD <sub>50</sub>	46 mg/kg	None reported	None reported	RTECS

**Acute Toxicity Estimate (ATE)** Not applicable

<b>ATEmix (oral)</b>	224.30 mg/kg
<b>ATEmix (dermal)</b>	673.00 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	1.12 mg/l
<b>ATEmix (inhalation-vapour)</b>	6.73 mg/l

**Unknown acute toxicity**

0 % of the mixture consists of ingredient(s) of unknown toxicity.

- 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

**Skin corrosion/irritation**

Causes severe burns.

Mixture No data available.

Substance Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and
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						<b>sources for data</b>
Methanol	OECD Test 439: In Vitro Skin Irritation: Reconstructed Human Epidermis (Rhe) Test Method	Rabbit	None reported	20 hours	Not corrosive or irritating to skin	ECHA
Nitric acid	Existing human experience	Human	None reported	None reported	Corrosive to skin	ERMA
Ferric nitrate	None reported	None reported	None reported	None reported	Skin irritant	No information available

**Serious eye damage/eye irritation**

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture No data available.

Substance Test data reported below.

<b>Chemical name</b>	<b>Test method</b>	<b>Species</b>	<b>Reported dose</b>	<b>Exposure time</b>	<b>Results</b>	<b>Key literature references and sources for data</b>
Methanol	OECD Test 439: In Vitro Skin Irritation: Reconstructed Human Epidermis (Rhe) Test Method	Rabbit	0.05 mL	24 hours	Not corrosive or irritating to eyes	ECHA
Nitric acid	Existing human experience	Human	None reported	None reported	Corrosive to eyes	ERMA
Ferric nitrate	None reported	None reported	None reported	None reported	Eye irritant	No information available

**Respiratory or skin sensitisation**

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance Test data reported below.

**Skin Sensitization Exposure Route:**

<b>Chemical name</b>	<b>Test method</b>	<b>Species</b>	<b>Results</b>	<b>Key literature references and sources for data</b>
Methanol	OECD Test No. 406: Skin Sensitisation	Guinea pig	No sensitisation responses were observed.	ECHA

**STOT - single exposure**

Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. Causes damage to organs in contact with skin.

Mixture No data available.

Substance Test data reported below.

**Oral Exposure Route:**

<b>Chemical name</b>	<b>Endpoint</b>	<b>Reported</b>	<b>Exposure</b>	<b>Toxicological effects</b>	<b>Key literature references and</b>
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	type	dose	time		sources for data
Methanol	Human LD <sub>Lo</sub>	143 mg/kg	None reported	<b>Lungs, Thorax, or Respiration</b> Dyspnea	RTECS

**Dermal Exposure Route:**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Nitric acid	Rat TD <sub>Lo</sub>	226500 mg/kg	None reported	<b>Blood</b> Methemoglobinemia-Carboxyhemoglobin	RTECS

**Inhalation (Vapor) Exposure Route:**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanol	Human TC <sub>Lo</sub>	300 mg/L	None reported	<b>Lungs, Thorax, or Respiration</b> Other changes	RTECS
Nitric acid	Rat TC <sub>Lo</sub>	460 mg/L	1 hours	<b>Nutritional and Gross Metabolic</b> Weight loss or decreased weight gain	RTECS

**STOT - repeated exposure**

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance Test data reported below.

**Oral Exposure Route:**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanol	Monkey	2340 mg/kg	3 days	None reported	ECHA

**Inhalation (Vapor) Exposure Route:**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Nitric acid	Rat TC <sub>Lo</sub>	0.001071 mg/L	84 days	<b>Behavioral</b> Muscle contraction or spasticity <b>Biochemical</b> Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) <b>Kidney, Ureter, or Bladder</b> Other changes in urine composition	RTECS

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

Mixture invitro **Data** No data available.

Substance invitro **Data** Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Methanol	DNA inhibition	Human lymphocyte	300 mmol/L	None reported	Positive test result for mutagenicity	RTECS

Mixture **invivo Data** No data available.

Substance **invivo Data** Test data reported below.

#### Oral Exposure Route:

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Methanol	DNA damage	Rat	0.405 mg/kg	None reported	Positive test result for mutagenicity	RTECS

#### Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance No data available.

#### Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance Test data reported below.

#### Oral Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanol	Rat TD <sub>Lo</sub>	4118 mg/kg	10 days	<b>Effects on Embryo or Fetus Specific Developmental Abnormalities</b> Ear Eye Fetotoxicity (except death e.g. stunted fetus) Urogenital System	RTECS
Nitric acid	Rat TD <sub>Lo</sub>	21150 mg/kg	21 days	<b>Effects on Embryo or Fetus</b> Fetotoxicity (except death e.g. stunted fetus)	RTECS

#### Inhalation (Dust/Mist) Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanol	Rat TC <sub>Lo</sub>	0.0026 mg/L	22 days	<b>Effects on Embryo or Fetus</b> Fetotoxicity (except death e.g. stunted fetus)	RTECS

#### **Aspiration hazard**

Based on available data, the classification criteria are not met.

**11.2. Information on other hazards**

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

**11.2.1. Endocrine disrupting properties**

**Endocrine disrupting properties** This product does not contain any known or suspected endocrine disruptors.

**11.2.2. Other information**

**Other adverse effects** No information available.

## Section 12: ECOLOGICAL INFORMATION

**12.1. Toxicity**

**Ecotoxicity** Toxic to aquatic life with long lasting effects.

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment.

**Mixture**

**Acute aquatic toxicity:** No data available.

**Aquatic Chronic Toxicity:** No data available.

**Substance**

**Acute aquatic toxicity:** Test data reported below.

Fish:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Thiocyanic acid, mercury(2+) salt	96 hours	<i>Pimephales promelas</i>	LC <sub>50</sub>	0.15 mg/L	HSDB

Crustacea:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Thiocyanic acid, mercury(2+) salt	48 Hours	<i>Daphnia magna</i>	EC <sub>50</sub>	0.0052 mg/L	Vendor SDS

**Aquatic Chronic Toxicity:** No data available.

**12.2. Persistence and degradability**

**Mixture** No data available.

**12.3. Bioaccumulative potential**

**Mixture:** No data available.

**Partition coefficient** No data available

**12.4. Mobility in soil**

**Soil Organic Carbon-Water Partition Coefficient** No data available

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

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Methanol	The substance is not PBT / vPvB
Nitric acid	The substance is not PBT / vPvB
Ferric nitrate	The substance is not PBT / vPvB

**12.6. Endocrine disrupting properties**

**Endocrine Disruptor Information:** This product does not contain any known or suspected endocrine disruptors

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Thiocyanic acid, mercury(2+) salt	Group III Chemical	-	-

**12.7. Other adverse effects**

No information available.

Ozone: Not applicable

**Ozone depletion potential (ODP):** No information available

## Section 13: DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods****Advice on Disposal**

**Waste from residues/unused products** Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Waste disposal number (residues/unused products)**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste.

**Waste disposal number (used product)**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste.

**Contaminated packaging** Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used.

## Section 14: TRANSPORT INFORMATION

**ADR**

**14.1 UN number or ID number** 3316

14.2 UN proper shipping name	CHEMICAL KIT
14.3 Transport hazard class(es)	9
14.4 Packing Group	II
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	251, 340, 671
Classification code	M11
Tunnel restriction code	(E)

**IATA**

14.1 UN number or ID number	UN3316
14.2 UN proper shipping name	Chemical kit
14.3 Transport hazard class(es)	9
14.4 Packing group	II
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	A163, A44

**IMDG**

14.1 UN number or ID number	UN3316
14.2 UN proper shipping name	CHEMICAL KIT
14.3 Transport hazard class(es)	9
14.4 Packing Group	II
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	251, 340
EmS-No	F-A, S-P
14.7 Maritime transport in bulk according to IMO instruments	No information available

**Additional information**

This product forms part of a kit. Information in this section relates to the kit as a whole.

**Section 15: REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

**Authorisations and/or restrictions on use:**

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Methanol - 67-56-1	Use restricted. See entry 69. Use restricted. See entry 75.	
Nitric acid - 7697-37-2	Use restricted. See entry 75.	
Thiocyanic acid, mercury(2+) salt - 592-85-8	Use restricted. See entry 18. Use restricted. See entry 75.	



**Persistent Organic Pollutants** Not applicable

**Export Notification requirements** This product contains substances which are regulated pursuant to Regulation (EC) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals

Chemical name	European Export/Import Restrictions per (EC) 689/2008 - Annex Number
Thiocyanic acid, mercury(2+) salt - 592-85-8	I.1 I.3 V

**Dangerous substance category per Seveso Directive (2012/18/EU)**

- H2 - ACUTE TOXIC
- H3 - STOT SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE
- P5a - FLAMMABLE LIQUIDS
- P5b - FLAMMABLE LIQUIDS
- P5c - FLAMMABLE LIQUIDS
- E2 - Hazardous to the Aquatic Environment in Category Chronic 2

**Named dangerous substances per Seveso Directive (2012/18/EU)**

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
Methanol - 67-56-1	500	5000

**Ozone-depleting substances (ODS) regulation (EC) 1005/2009**

Not applicable

**Germany**

**Water hazard class (WGK)** obviously hazardous to water (WGK 2)

**France**

**Occupational Illnesses (R-463-3, France)**

Chemical name	French RG number	Title
Methanol 67-56-1	RG 84	-
Thiocyanic acid, mercury(2+) salt 592-85-8	RG 2	-

**International Inventories**

EINECS/ELINCS Complies  
TSCA Complies  
DSL/NDSL Complies  
ENCS Complies  
IECSC Complies  
KECL Complies

PICCS Complies  
AICS Complies

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

### 15.2. Chemical safety assessment

**Chemical Safety Report** Chemical safety assessments for substances in this mixture were not carried out.

## Section 16: OTHER INFORMATION

**Issue Date** 02-Apr-2005  
**Revision Date** 11-Jul-2024  
**Revision Note** updated SDS sections:  
14

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### Legend

**	Hazard Designation
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieure
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service Number
Ceiling	Maximum limit value
CLP	Classification, Labelling and Packaging of substances and mixtures [Regulation (EC) No. 1272/2008]
DNEL	Derived No Effect Level (DNEL)
EC	European Community
ECHA	ECHA (The European Chemicals Agency)
EC50	Effective Concentration to 50% of a test population
EEC	European Economic Community
EN	European Standard
IMDG	International Maritime Dangerous Goods (IMDG)
IATA	International Air Transport Association (IATA)
IATA-DGR	International Air Transport Association - Dangerous Goods Regulations
ICAO	International Civil Aviation Organization
ICAO-TI	International Civil Aviation Organization - Technical Instructions
IUCLID	IUCLID (The International Uniform Chemical Information Database)
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
LOAEL	Lowest observed adverse effect level
LOAEC	Lowest observed adverse effect concentration
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
MAK	Maximale Arbeitsplatz-Konzentration, a German expression corresponding to threshold limit

	value, which relates to safe daily exposure levels to chemical substances
NOAEL	NOAEL (No observed adverse effect level)
NOAEC	No observed adverse effect concentration
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labour)
PEC	Predicted Effect Concentration
PNEC	Predicted No Effect Concentration (PNEC)
PBT	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals [Regulation (EC) No. 1907/2006]
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
TWA	TWA (time-weighted average)
SKN*	Skin designation
SKN+	Skin sensitisation
STEL	STEL (Short Term Exposure Limit)
STOT	Specific Target Organ Toxicity
STOT RE	Specific target organ toxicity — repeated exposure
STOT SE	Specific target organ toxicity — single exposure
SVHC	Substances of Very High Concern
TLV	Threshold Limit Value
TRGS	Technical rules for hazardous substances, Germany
TSCA	Toxic Substances Control Act
UN	United Nations
vPvB	very persistent and very bioaccumulative
VOC	Volatile organic compounds
AwSV	Administrative regulation of water polluting substances, Germany

#### Key literature references and sources for data

See Section 11: TOXICOLOGICAL INFORMATION

See Section 12: ECOLOGICAL INFORMATION

#### Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration toxicity	Calculation method
Ozone	Calculation method

#### Full text of H-Statements referred to under section 3

H225 - Highly flammable liquid and vapour

H272 - May intensify fire; oxidiser

H300 - Fatal if swallowed

H301 - Toxic if swallowed

H310 - Fatal in contact with skin

H311 - Toxic in contact with skin

H314 - Causes severe skin burns and eye damage

H315 - Causes skin irritation

H318 - Causes serious eye damage

H319 - Causes serious eye irritation

H330 - Fatal if inhaled

H331 - Toxic if inhaled

H336 - May cause drowsiness or dizziness

H370 - Causes damage to organs

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

**Training Advice** Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

**Prepared By** Hach Product Compliance Department

**Restrictions on use** Not determined

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

**End of Safety Data Sheet**