

## SAFETY DATA SHEET

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

## 1.1 Product identifier

- Product Name: Testing Solution No. 19
- Contains 25% potassium fluoride
- Product Part Number: TS19  
129115150  
129115144

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

- Use of the substance/mixture: Test reagent
- Use advised against: No information available

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

- Name of Supplier: Solmedia Limited
- Address of Supplier: Unit 2, Vernon Drive  
Battlefield Enterprise Park  
Shrewsbury  
SY1 3TF  
UK
- Telephone: 0844 8080 900
- Email: Labsupplies@solmedialtd.com

## 1.4 Emergency telephone number

- Emergency Telephone: 0844 8080 909 (24hr)

**SECTION 2: Hazards identification**

## 2.1 Classification of the substance or mixture

- Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]: Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Dam. 1, H318
- Additional information: For full text of Hazard- and EU Hazard-statements: see section 16

## 2.2 Label elements



- Signal Word: Danger
- Hazard statements  
H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled  
H318 - Causes serious eye damage.
- Precautionary statements  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 - IF SWALLOWED: Call a POISON CENTRE/doctor/ if you feel unwell.  
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a POISON CENTER or doctor/physician.

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**SECTION 2: Hazards identification (....)**

- Supplemental Hazard Information (EU)  
None

**2.3 Other hazards**

- May form explosive vapour/air mixtures
  - Not a PBT according to REACH Annex XIII
  - Not a vPvB according to REACH Annex XIII
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**SECTION 3: Composition/information on ingredients****3.1 Substances****3.2 Mixtures**

- potassium fluoride  
Concentration: 20 - 30%  
CAS Number: 7789-23-3  
EC Number: 232-151-5  
Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]: Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Eye Dam. 1, H318  
REACH Registration Number: 01-2119555273-40-XXXX  
Substance with a workplace exposure limit, see Section 8
  - ethanol; ethyl alcohol  
Concentration: <5%  
CAS Number: 64-17-5  
EC Number: 200-578-6  
Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]: Flam. Liq. 2, H225; Eye Irrit. 2, H319  
REACH Registration Number: 01-2119457610-43-XXXX  
Substance with a workplace exposure limit, see Section 8
  - methanol  
Concentration: <1%  
CAS Number: 67-56-1  
EC Number: 200-659-6  
Classification (REGULATION (EC) No 1272/2008) [CLP/GHS]: Flam. Liq. 2, H225; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT SE 1, H370  
REACH Registration Number: 01-2119433307-44-XXXX  
Substance with a workplace exposure limit, see Section 8
- 

**SECTION 4: First aid measures****4.1 Description of first aid measures**

- Contact with eyes  
If substance has got into eyes, immediately wash out with plenty of water for several minutes  
Irrigate eyes thoroughly whilst lifting eyelids  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Seek immediate medical attention
  - Contact with skin  
Take off contaminated clothing and wash it before reuse.  
Wash affected area with plenty of soap and water  
Get medical advice/attention.
  - Ingestion  
Rinse mouth.  
Give plenty of water to drink
-

**SECTION 4: First aid measures (....)**

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

- Inhalation  
If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Keep warm and at rest, in a half upright position. Loosen clothing  
Get immediate medical advice/attention.

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

- Contact with eyes  
May cause severe damage with formation of corneal ulcers and permanent impairment of vision.  
May cause blurred vision
- Contact with skin  
May cause skin irritation
- Ingestion  
May cause gastro-intestinal irritation  
May cause nausea/vomiting  
May cause diarrhoea
- Inhalation  
May cause respiratory irritation  
May cause breathing difficulty

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

- Treat symptomatically
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**SECTION 5: Firefighting measures****5.1 Extinguishing media**

- In case of fire use water spray or fog, alcohol resistant foam, dry chemical or carbon dioxide
- Unsuitable extinguishing media: high volume water jet
- Use water to cool containers exposed to fire.

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

- Gives off irritating or toxic fumes (or gases) in a fire.
- Vapours may ignite

**5.3 Advice for firefighters**

- Collect contaminated fire extinguishing water separately. This MUST not be discharged into drains. Prevent fire extinguishing water from contaminating surface or ground water.
  - Special protective equipment: Wear self-contained breathing apparatus (SCBA). Wear full protective clothing including chemical protection suit.
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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

- Personal precautions for non-emergency personnel: Ensure adequate ventilation; Avoid contact with skin and eyes; Avoid breathing vapours, mist or gas; Wear protective clothing as per section 8; Wash thoroughly after handling.
- Personal precautions for emergency responders: Evacuate the area and keep personnel upwind; Avoid contact with skin and eyes; Avoid breathing vapours, mist or gas; Wear chemical protection suit; Wear self-contained breathing apparatus (SCBA).

**6.2 Environmental precautions**

- Avoid release to the environment.
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**SECTION 6: Accidental release measures (....)**

- Do not allow to enter public sewers and watercourses
- If polluted water reaches drainage systems or water courses, immediately inform appropriate authorities

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

- Stop leak if safe to do so.
- Contain the spillage using bunding
- Absorb spillage in inert material and shovel up
- Place in appropriate container
- Seal containers and label them
- Remove contaminated material to safe location for subsequent disposal
- To be disposed of as hazardous waste

**6.4 Reference to other sections**

- See section(s): 7, 8 & 13
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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

- Keep away from heat and sources of ignition
- Avoid breathing vapours, mist or gas
- Do not get in eyes, on skin, or on clothing.
- Do not eat, drink or smoke when using this product.
- Wear protective clothing as per section 8
- Contaminated clothing should be laundered before reuse
- Wash thoroughly after handling.
- Provide sufficient air exchange and/or exhaust in work rooms.
- Wear respiratory protection.

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

- Store in a well-ventilated place. Keep container tightly closed.
- Keep only in the original container
- Keep container dry
- Keep away from oxidisers, heat, flames or ignition sources
- Store at ambient temperature
- Keep away from acid
- Keep away from oxidising substances

**7.3 Specific end use(s)**

- Test reagent
- 

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters**

- potassium fluoride  
(EU) OELV (long term TWA) (inorganic as F) 2.5 mg/m<sup>3</sup>  
WEL (long term): 2.5 mg/m<sup>3</sup> (UK, inorganic as F)  
DNEL (inhalational) 3 mg/m<sup>3</sup> Industry, Long Term, Systemic Effects  
DNEL (inhalational) 12 mg/m<sup>3</sup> Industry, Acute/Short Term, Systemic Effects  
DNEL (inhalational) 3 mg/m<sup>3</sup> Industry, Long Term, Local Effects  
DNEL (inhalational) 12 mg/m<sup>3</sup> Industry, Acute/Short Term, Local Effects  
DNEL (dermal) 440 µg/kg (bw/day) Industry, Long Term, Systemic Effects  
DNEL (dermal) 440 µg/kg (bw/day) Industry, Acute/Short Term, Systemic Effects  
PNEC aqua (freshwater) 890 µg/l  
PNEC (STP) 51 mg/l  
PNEC terrestrial (soil) 11 mg/kg
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**SECTION 8: Exposure controls/personal protection (....)**

- ethanol; ethyl alcohol
  - WEL (long term TWA) 1 000 ppm 1 920 mg/m<sup>3</sup> (UK)
  - DNEL (inhalational) 950 mg/m<sup>3</sup> Industry, Long Term, Systemic Effects
  - DNEL (inhalational) 1 900 mg/m<sup>3</sup> Industry, Acute/Short Term, Local Effects
  - DNEL (dermal) 343 mg/kg (bw/day) Industry, Long Term, Systemic Effects
  - DNEL (inhalational) 114 mg/m<sup>3</sup> Consumer, Long Term, Systemic Effects
  - DNEL (inhalational) 950 mg/m<sup>3</sup> Consumer, Acute/Short Term, Local Effects
  - DNEL (dermal) 206 mg/kg (bw/day) Consumer, Long Term, Systemic Effects
  - DNEL (oral) 87 mg/kg (bw/day) Consumer, Long Term, Systemic Effects
  - PNEC aqua (freshwater) 960 ng/l
  - PNEC aqua (intermittent releases) (freshwater) 2.75 mg/l
  - PNEC aqua (marine water) 790 ng/l
  - PNEC (STP) 580 mg/l
  - PNEC sediment (freshwater) 3.6 mg/kg
  - PNEC sediment (marine water) 2.9 mg/kg
  - PNEC terrestrial (soil) 630 ng/kg
  - PNEC secondary poisoning (food) 380 - 720 mg/kg
- methanol
  - (EU) OELV (long term TWA) 200 ppm 260 mg/m<sup>3</sup>
  - WEL (long term TWA) 200 ppm 266 mg/m<sup>3</sup> (UK)
  - WEL (short term limit value) 250 ppm 333 mg/m<sup>3</sup> (UK)
  - DNEL (inhalational) 260 mg/m<sup>3</sup> Industry, Long Term, Systemic Effects
  - DNEL (inhalational) 260 mg/m<sup>3</sup> Industry, Acute/Short Term, Systemic Effects
  - DNEL (inhalational) 260 mg/m<sup>3</sup> Industry, Long Term, Local Effects
  - DNEL (inhalational) 260 mg/m<sup>3</sup> Industry, Acute/Short Term, Local Effects
  - DNEL (dermal) 40 mg/kg (bw/day) Industry, Long Term, Systemic Effects
  - DNEL (dermal) 40 mg/kg (bw/day) Industry, Acute/Short Term, Systemic Effects
  - DNEL (inhalational) 50 mg/m<sup>3</sup> Consumer, Long Term, Systemic Effects
  - DNEL (inhalational) 50 mg/m<sup>3</sup> Consumer, Acute/Short Term, Systemic Effects
  - DNEL (inhalational) 50 mg/m<sup>3</sup> Consumer, Long Term, Local Effects
  - DNEL (inhalational) 50 mg/m<sup>3</sup> Consumer, Acute/Short Term, Local Effects
  - DNEL (dermal) 8 mg/kg (bw/day) Consumer, Long Term, Systemic Effects
  - DNEL (dermal) 8 mg/kg (bw/day) Consumer, Acute/Short Term, Systemic Effects
  - DNEL (oral) 8 mg/kg (bw/day) Consumer, Long Term, Systemic Effects
  - DNEL (oral) 8 mg/kg (bw/day) Consumer, Acute/Short Term, Systemic Effects
  - PNEC aqua (freshwater) 20.8 mg/l
  - PNEC aqua (intermittent releases) (freshwater) 1.54 g/l
  - PNEC aqua (marine water) 2.08 mg/l
  - PNEC (STP) 100 mg/l
  - PNEC sediment (freshwater) 77 mg/kg
  - PNEC sediment (marine water) 7.7 mg/kg
  - PNEC terrestrial (soil) 100 mg/kg

**8.2 Exposure controls**

- Selection and use of personal protective equipment should be based on a risk assessment of exposure potential
- Engineering controls should be provided which maintain airborne concentrations below the relevant guidelines
- In case of inadequate ventilation wear respiratory protection.
- Where a full face mask respirator is required, use EN 136, with gas/vapour filter EN 14387 type ABEK
- Wear suitable protective clothing
- Contaminated clothing should be laundered before reuse
- Wear safety glasses approved to standard EN 166.
- When handling this substance, e.g. sampling, wear goggles giving complete eye protection
- Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374.
- The selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Breakthrough time is dependent on the characteristics of the brand of glove used and the supplier should be consulted.
- Use good personal hygiene practices

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**SECTION 8: Exposure controls/personal protection (....)**

- Wash thoroughly after handling.
- Ensure eyewash stations and safety showers are nearby
- Do not eat, drink or smoke when using this product.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

- Appearance: Liquid; colourless
- Odour: None
- Odour threshold: No information available
- pH: Potassium fluoride 8 - 9  
Concentration: 50 g/l at 20 °C
- Melting point/freezing point: Potassium fluoride 846 °C @ 101.325 kPa
- Initial boiling point and boiling range: Potassium fluoride 1 505 °C @ 101.325 kPa
- Flashpoint: Not applicable
- Evaporation Rate: No information available
- Flammability (solid,gas): Not applicable
- Upper/lower flammability or explosive limits: Not applicable
- Vapour Pressure: No information available
- Vapour Density: No information available
- Relative Density: Water = 1  
Potassium fluoride 2.49 @ 22 °C
- Solubility(ies): Completely soluble in water;  
Solubility in water: Potassium fluoride 923 g/l @ 18°C and pH 7
- Partition Coefficient (n-Octanol/Water): No information available
- Autoignition Temperature: No information available
- Decomposition temperature: No information available
- Viscosity: No information available
- Explosive Properties: No information available
- Oxidising properties: No information available

**9.2 Other information**

- No information available

**SECTION 10: Stability and reactivity****10.1 Reactivity**

- No decomposition if stored normally.

**10.2 Chemical stability**

- Stable under normal conditions

**10.3 Possibility of hazardous reactions**

- Reacts with acids to form hydrogen fluoride
- May form explosive vapour/air mixtures

**10.4 Conditions to avoid**

- Avoid overheating
- Heating can release vapours which can be ignited

**10.5 Incompatible materials**

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**SECTION 10: Stability and reactivity (....)**

- Incompatible with acid
- Incompatible with strong oxidizing substances

**10.6 Hazardous decomposition products**

- Decomposition products may include carbon oxides
  - Decomposition products may include hydrogen fluoride
- 

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

- Acute Toxicity  
Harmful if swallowed, in contact with skin or if inhaled  
Classification based on calculation and concentration thresholds  
potassium fluoride  
LD50 (oral, rat) (female) 148.5 mg/kg bw  
LD50 (oral, rat) (male) 223 mg/kg bw  
LC50 (inhalation, rat) 1 mg/l/4h  
LD50 (dermal, rat) 2 000 mg/kg bw  
ethanol  
LD50 (oral, rat) 1 187 - 15 010 mg/kg bw  
LC50 (inhalation, rat) 115.9 - 133.8 mg/l/4h  
methanol  
LD50 (oral, rat) 1 187 - 2 769 mg/kg bw  
LC50 (inhalation, rat) 115.9 - 130.7 mg/l/4h
- Skin corrosion/irritation  
Based on available data, the classification criteria are not met
- Serious eye damage/irritation  
Causes serious eye damage.  
Classification based on calculation and concentration thresholds
- Respiratory or skin sensitisation  
Based on available data, the classification criteria are not met
- Germ cell mutagenicity  
No evidence of mutagenic effects
- Carcinogenicity  
No evidence of carcinogenic effects
- Reproductive toxicity  
No evidence of reproductive effects
- Specific target organ toxicity (STOT) - single exposure  
Based on available data, the classification criteria are not met
- Specific target organ toxicity (STOT) - repeated exposure  
Based on available data, the classification criteria are not met
- Aspiration hazard  
No information available
- Contact with eyes  
May cause severe damage with formation of corneal ulcers and permanent impairment of vision.  
May cause blurred vision
- Contact with skin
- Ingestion  
May disturb the central nervous system  
May cause gastro-intestinal irritation  
May cause nausea/vomiting  
May cause diarrhoea

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**SECTION 11: Toxicological information (....)**

- Inhalation
    - May cause respiratory irritation
    - May cause breathing difficulty
- 

**SECTION 12: Ecological information**

## 12.1 Toxicity

- Based on available data, the classification criteria are not met
- potassium fluoride
  - LC50 (fish) 51 - 340 mg/l (4 days)
  - EC50 (aquatic invertebrates) 26 - 48 mg/l (4 days)
  - EC50 (aquatic algae) 43 - 122 mg/l (4 days)
- ethanol; ethyl alcohol
  - LC50 (fish) 14.2 - 15.4 g/l (4 days)
  - EC50 (aquatic invertebrates) 10 g/l (48 hr)
  - EC50 (aquatic algae) 275 mg/l (72 hr)
- methanol
  - LC50 (fish) 15.4 g/l (4 days)
  - EC50 (aquatic invertebrates) 18.26 g/l (4 days)
  - EC50 (aquatic algae) 22 g/l (4 days)

## 12.2 Persistence and degradability

- No information available

## 12.3 Bioaccumulative potential

- No information available

## 12.4 Mobility in soil

- Soluble in water

## 12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII
- Not a vPvB according to REACH Annex XIII

## 12.6 Other adverse effects

- To the best of our knowledge, the ecological properties of this material have not been fully evaluated.
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**SECTION 13: Disposal considerations**

## 13.1 Waste treatment methods

- Do not discharge into drains or the environment, dispose to an authorised waste collection point
- Disposal should be in accordance with local, state or national legislation
- This material and/or its container must be disposed of as hazardous waste
- Do not reuse empty containers without commercial cleaning or reconditioning

## 13.2 Classification

- The waste must be identified according to the List of Wastes (2000/532/EC)
- 

**SECTION 14: Transport information**

Not classified as hazardous for transport

## 14.1 UN number

- UN No.: Not applicable
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**SECTION 14: Transport information (....)**

## 14.2 UN proper shipping name

- Proper Shipping Name: Not applicable

## 14.3 Transport hazard class(es)

- Hazard Class: Not applicable

## 14.4 Packing group

- Packing Group: Not applicable

## 14.5 Environmental hazards

- Not Classified

## 14.6 Special precautions for user

- Not Classified

## 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

- Not Classified

## 14.8 Road/Rail (ADR/RID)

- Proper Shipping Name: Not applicable
- ADR UN No.: Not applicable
- ADR Hazard Class: Not applicable
- ADR Packing Group: Not applicable
- Tunnel Code: Not applicable

## 14.9 Sea (IMDG)

- Proper Shipping Name: Not applicable
- IMDG UN No.: Not applicable
- IMDG Hazard Class: Not applicable
- IMDG Pack Group.: Not applicable

## 14.10 Air (ICAO/IATA)

- Proper Shipping Name: Not applicable
- ICAO UN No.: Not applicable
- ICAO Hazard Class: Not applicable
- ICAO Packing Group: Not applicable

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**SECTION 15: Regulatory information**

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

- This safety data sheet is provided in compliance with REACH Regulation (EC) No 1907/2006 as amended by Regulation (EU) 2015/830
- Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe

## 15.2 Chemical safety assessment

- A REACH chemical safety assessment has not been carried out

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**SECTION 16: Other information**

The information provided is based on our current knowledge and experience and apply to the product as delivered. Regarding the product properties, these are not guaranteed. The delivery of this safety datasheet does not free the recipient of the product from his own responsibility to follow the relevant rules and regulations concerning this product.

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**SECTION 16: Other information (....)**

Revision No. 2.0.0. Revised March 2018.

Changes made: Revised to conform to the latest version of REACH Annex II and CLP.

Revision No. 2.1.0. Revised April 2018.

Changes made: Product code added to subsection 1.1

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Acute Tox. 4, H302: Classification based on calculation and concentration thresholds

Acute Tox. 4, H312: Classification based on calculation and concentration thresholds

Acute Tox. 4, H332: Classification based on calculation and concentration thresholds

Eye Dam. 1, H318: Classification based on calculation and concentration thresholds

Text not given with phrase codes where they are used elsewhere in this safety data sheet:

- H225: Highly flammable liquid and vapour.
- H301: Toxic if swallowed
- H302: Harmful if swallowed
- H311: Toxic in contact with skin
- H312: Harmful in contact with skin.
- H318: Causes serious eye damage
- H319: Causes serious eye irritation.
- H331: Toxic if inhaled
- H332: Harmful if inhaled
- H370: Causes damage to organs

--- end of safety datasheet ---

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