# MATERIAL SAFETY DATA SHEET

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

### 1.1 Product identifiers

Product name: Testing Solution No. 19

25% Potassium fluoride in aqueous solution (H2O)

Product Number:

- TS19
- 129115150
- 129115144

Brand: Solmedia Ltd

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

Identified uses: Test reagent

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


- Name of Supplier: Solmedia Ltd.
- Address of Supplier: Unit 2, Vernon Drive
  Battlefield Enterprise Park
  Shrewsbury
  SY1 3TF
  UK
- Telephone: 0844 80 80 900
- Email: labsupplies@solmedialtd.com


### 1.4 Emergency telephone number

Emergency Phone # +44 (0)844 80 80 900

## 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.
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

---

**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

**After inhalation**

If throat irritation or coughing is consistent, move person into fresh air and keep person warm. If difficulty breathing remove tight or restrictive clothing and assume them a comfortable position. If not breathing, give artificial respiration.

**In case of skin contact**

Wash off with soap and plenty of water. Seek medical help if problems persist.

**After eye contact**

Promptly wash the eye with running water for 15 minutes. Open eyes wide apart and rinse well to remove any contact lenses. Do not remove contact lenses by hand. Continue to rinse. Get medical attention if symptoms persist

**In case of ingestion**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Do not induce vomiting and if vomiting occurs ensure head is tilted forward to prevent vomit from entering the lungs or chocking the user.

### 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

**4.4 Self-protection of the first aider**

First aider: Pay attention to self-protection!

**4.5 Information to physician**

No data available

---

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

Suitable extinguishing media the product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons no restriction

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

In case of fire may be liberated: Carbon dioxide (CO2) Carbon monoxide Nitrogen oxides (NOx) Sulphur oxides

**5.3 Advice for firefighters**

Avoid breathing in gases or vapours and evacuate area. DO NOT fight fire when fire reaches explosives. In case of fire: Wear self-contained breathing apparatus and only cool containers exposed to heat with water when safe to do so.

**5.4 Additional information**

Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen. Use water spray jet to protect personnel and to cool endangered containers.

---

**SECTION 6: Accidental release measures**

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

Avoid breathing vapours, mist or gas.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not allow to enter into surface water or drains as product is water-soluble and can potentially spread to water systems.

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

Keep in suitable, closed containers for disposal and handle any leakage with PPE. For small spillages, wipe with absorbent cloth and/or absorbent disposable material and dispose of safely. For larger spillages use absorbent material i.e vermiculite and put into containers and dispose of safely.

Spilled product must never be returned to the original container for recycling. Clean contaminated objects and areas thoroughly observing environmental regulations. Collect in closed and suitable containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13. Clear spills immediately.

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

For precautions see section 2.2.

All work processes must always be designed so that the following is as low as possible: Inhalation skin contact Eye contact. Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

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

Store in cool place. Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and areas prone to freezing. Store away from Acids, alkalis and oxidising substances.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Components with workplace control parameters

**Potassium fluoride**
(EU) OELV (long term TWA) (inorganic as F) 2.5 mg/m3
WEL (long term): 2.5 mg/m3 (UK, inorganic as F)
DNEL (inhalational) 3 mg/m3 Industry, Long Term, Systemic Effects
DNEL (inhalational) 12 mg/m3 Industry, Acute/Short Term, Systemic Effects
DNEL (inhalational) 3 mg/m3 Industry, Long Term, Local Effects
DNEL (inhalational) 12 mg/m3 Industry, Acute/Short Term, Local Effects

DNEL (dermal) 440 ug/kg (bw/day) Industry, Long Term, Systemic Effects
DNEL (dermal) 440 ug/kg (bw/day) Industry, Acute/Short Term, Systemic Effects
PNEC aqua (freshwater) 890 ug/l
PNEC (STP) 51 mg/l
PNEC terrestrial (soil) 11 mg/kg

**Ethanol; ethyl alcohol**
WEL (long term TWA) 1 000 ppm 1 920 mg/m3 (UK)
DNEL (inhalational) 950 mg/m3 Industry, Long Term, Systemic Effects
DNEL (inhalational) 1 900 mg/m3 Industry, Acute/Short Term, Local Effects
DNEL (dermal) 343 mg/kg (bw/day) Industry, Long Term, Systemic Effects
DNEL (inhalational) 114 mg/m3 Consumer, Long Term, Systemic Effects
DNEL (inhalational) 950 mg/m3 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/m3
WEL (long term TWA) 200 ppm 266 mg/m3 (UK)
WEL (short term limit value) 250 ppm 333 mg/m3 (UK)
DNEL (inhalational) 260 mg/m3 Industry, Long Term, Systemic Effects
DNEL (inhalational) 260 mg/m3 Industry, Acute/Short Term, Systemic Effects
DNEL (inhalational) 260 mg/m3 Industry, Long Term, Local Effects
DNEL (inhalational) 260 mg/m3 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/m3 Consumer, Long Term, Systemic Effects
DNEL (inhalational) 50 mg/m3 Consumer, Acute/Short Term, Systemic Effects
DNEL (inhalational) 50 mg/m3 Consumer, Long Term, Local Effects
DNEL (inhalational) 50 mg/m3 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**

**Appropriate engineering controls**

General industrial hygiene practice.

**Personal protective equipment**

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

(Without touching glove's outer surface) to avoid skin contact with this product. Dispose of

Contaminated gloves after use in accordance with applicable laws and good laboratory practices.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

| | |
|---|---|
| Full contact | Material: Nitrile rubber<br>Minimum layer thickness: 0.11 mm<br>Break through time: 480 min |
| Splash contact | Material: Nitrile rubber<br>Minimum layer thickness: 0.11 mm<br>Break through time: 480 min |

Wash and dry hands.

**Body Protection**

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Respiratory protection required. For nuisance exposures use type OV/AG (US) or type ABEK

(EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Eye protection:**

Goggles recommended during refilling: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

**Additional information**

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

**Control of environmental exposure**

No special environmental precautions required.

---

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance: Liquid; Magenta; Pink, colour may fade over time, does not effect use.
- 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 safety information

No data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

May react with acids and alkalis due to water present in solution

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

May generate heat when mixed with Acids and forms hydrogen fluoride

May form explosive vapour/air mixture

**10.4 Conditions to avoid**

Avoid temperature extremes, and storage with Acids and alkalis

Heating can release vapours which can be ignited

**10.5 Incompatible materials**

Acids, Alkalis and oxidising substances

**10.6 Hazardous decomposition products**

Decomposition products may include carbon oxides and hydrogen fluoride.

In the event of fire: see section 5

---

**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

**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

**Ingestion**
May disturb the central nervous system
May cause gastro-intestinal irritation
May cause nausea/vomiting
May cause diarrhoea

## 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 data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

To the best of our knowledge, the ecological properties of this material have not been fully evaluated.

---

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

**Contaminated packaging**

Dispose of as unused product.

---

## SECTION 14: Transport information

No dangerous goods in sense of this transport regulation

---

## SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of 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

For this product a chemical safety assessment was not carried out

**SECTION 16: Other information**

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