Useable for:

| TF E-2000 | TSH ELISA 2nd Generation |
| TF E-2300 | T3 ELISA 2nd Generation  |
| TF E-2400 | T4 ELISA 2nd Generation  |

Single components with dangerous ingredients:

<table>
<thead>
<tr>
<th>REF:</th>
<th>Description</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR E-0080</td>
<td>Stop Solution</td>
<td>STOP-SOLN</td>
</tr>
<tr>
<td>TF E-0055</td>
<td>Substrate Solution</td>
<td>SUBSTRATE</td>
</tr>
</tbody>
</table>

Not listed single components contain no hazardous substances in concentrations to be declared, a labelling is not required.
1 Identification of the substance / mixture and of the company / undertaking

1.1 Product identifier
Trade name: Stop Solution
Article number: FR E-0080

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses:
laboratory reagent / Immunoassay
The product is intended for professional use.

1.3 Details of the supplier of the safety data sheet
Manufacturer / Supplier:
LDN Labor Diagnostika Nord GmbH & Co. KG
Am Eichenhain 1
48531 Nordhorn, Germany
Phone +49 5921 8197 200
Fax +49 5921 8197 201
E-Mail support@ldn.de

1.4 Emergency telephone number
+49 5921 8197 200

2 Hazards identification

2.1 Classification of the substance or mixture
REGULATION (EC) No 1272/2008
Corrosive to metals, Category 1, H290
Skin corrosive, Category 1A, H314

2.2 Label elements
REGULATION (EC) No 1272/2008
Hazard pictograms:

Signal word: Warning
Hazard statements:
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
Precautionary statements:
P234 Keep only in original packaging.
P390 Absorb spillage to prevent material damage.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352 IF ON SKIN: Wash with plenty of water and soap.

2.3 Other hazards
None known.
3 Composition / information on ingredients

3.1 Substances
Not applicable.

3.2 Mixtures
Composition / information on ingredients
CAS: 7664-93-9 sulphuric acid < 5 %
H290; H314
Additional information:
For the full text of the H-Statements mentioned in this section, see section 16.

4 First aid measures

4.1 First aid measures
After inhalation: fresh air, consult doctor in case of complaints.
After skin contact: wash off with plenty of water. Remove contaminated clothing.
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.
After swallowing: drink water (two glasses at most). Consult doctor if feeling unwell.

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

4.3 Indication of any immediate medical attention and special treatment needed
No information available.

5 Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media:
For this mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters
Special protective equipment for firefighters:
In the event of fire, wear self-contained breathing apparatus.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapours, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders: Protective equipment see section 8.
6.2 **Environmental precautions**
No special precautionary measures necessary.

6.3 **Methods and materials for containment and cleaning up**
Observe possible material restrictions! Take up with liquid-absorbent and neutralising material. Dispose of properly. Clean up affected area.

6.4 **Reference to other sections**
Indications about possible material restrictions see sections 7 and 10 and about waste treatment see section 13.

7 **Handling and storage**

7.1 **Precautions for safe handling**
Advice on safe handling:
Observe label precautions.
Hygiene measures:
Change contaminated clothing. Wash hands after working with substance.

7.2 **Conditions for safe storage, including any incompatibilities**
Storage conditions:
Tightly closed and dry.

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8 **Exposure controls / personal protection**

8.1 **Control parameters**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

8.2 **Exposure controls**
Engineering measures:
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See section 7.1.

Individual protection measures:
General protective and hygienic measures:
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately. Avoid contact with the eyes and skin.
Respiratory protection:
In case of good room ventilation, not necessary.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Protection of hands:
Protective gloves.
Material of gloves:
Chemical protection gloves are to be selected according to the concentration and quantity of the hazardous substance concentration and quantity in workplace.
The glove material has to be impermeable and resistant to the product / the substance / the preparation. The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374.

Eye protection:
- Tightly sealed goggles

Body protection:
- Lab coat

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>1.0</td>
</tr>
<tr>
<td>Melting point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No information available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not classified as explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>None</td>
</tr>
</tbody>
</table>

9.2 Other data

Corrosion: May be corrosive to metals.

10 Stability and reactivity

10.1 Reactivity

No further relevant information available.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).
10.3 Possibility of hazardous reactions
Corrosive effect on metals.

10.4 Conditions to avoid
Heat.

10.5 Incompatible materials
Metals.

10.6 Hazardous decomposition products
No dangerous decomposition products known.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity
sulphuric acid
oral LD50 2140 mg/kg (rat)
inhalative LC50/4h 0.375 mg/l (rat)

Skin corrosion/irritation
May cause irritation to the skin.

Serious eye damage/irritation
May cause irritation to the eyes.

Respiratory or skin sensitisation
No sensitizing effects known.

Germ cell mutagenicity
No information available.

Carcinogenicity
No information available.

Reproductive toxicity
No information available.

STOT-single exposure
No information available.

STOT-repeated exposure
No information available.

Aspiration hazard
No information available.

11.2 Additional information
On the basis of the morphology of the product, no hazardous properties are to be expected when it is handled and used with appropriate care. Handle in accordance with good industrial hygiene and safety practice.
12 Ecological information

12.1 Toxicity
sulphuric acid
EC50/48h (static) > 100 mg/l (Daphnia magna)
LC50/72h (static) > 100 mg/l (Desmodesmus subspicatus)
LC50/96h (static) > 16 > 28 mg/l (Lepomis macrochirus)

12.2 Persistence and degradability
No further relevant information available.

12.3 Bioaccumulative potential
No further relevant information available.

12.4 Mobility in soil
No further relevant information available.

12.5 Results of PBT and vPvB assessment
Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

12.6 Other adverse effects
No further relevant information available.

13 Disposal considerations

13.1 Waste treatment methods
Dispose of packaging according to applicable local, state, and federal regulations. Packaging’s that may not be cleansed are to be disposed of in the same manner as the product.

14 Transport information

This product is part of a kit. Information in this section refers to the kit as a whole.

14.1 UN No.
No dangerous good in sense of this transport regulation.

14.2 UN Proper shipping name
No dangerous good in sense of this transport regulation.

14.3 Class
No dangerous good in sense of this transport regulation.

14.4 Packing group
No dangerous good in sense of this transport regulation.

14.5 Environmental hazards
No.
14.6 Special precautions for user
   No.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
   Not relevant.

15 Regulatory information

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

   EU regulations
   Major Accident Hazard: SEVESO III
   Not applicable
   Employment restrictions:
   Observe employment restrictions in accordance with the youth employment protection
   regulations (94/33/EC).
   Substances of very high concern (SVHC):
   This product does not contain substances of very high concern according to Regulation

   National legislation
   Water hazard class:
   Water hazard class 1 (slightly hazardous for water)
   Storage class:
   10 - 13

15.2 Chemical Safety Assessment
   For this product a chemical safety assessment was not carried out.

16 Other information

   This information is based on our present knowledge. However, this shall not constitute a
   guarantee for any specific product features and shall not establish a legally valid
   contractual relationship.

   Relevant phrases:
   H290 May be corrosive to metals.
   H314 Causes severe skin burns and eye damage.

   Department issuing SDS:
   Safety Representative

   Contact:
   LDN
1 Identification of the substance / mixture and of the company / undertaking

1.1 Product identifier
Trade name: Substrate Solution
Article number: TF E-0055

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses:
laboratory reagent / Immunoassay
The product is intended for professional use.

1.3 Details of the supplier of the safety data sheet
Manufacturer / Supplier:
LDN Labor Diagnostika Nord GmbH & Co. KG
Am Eichenhain 1
48531 Nordhorn, Germany
Phone  +49 5921 8197 200
Fax    +49 5921 8197 201
E-Mail  support@ldn.de

1.4 Emergency telephone number
+49 5921 8197 200

2 Hazards identification

2.1 Classification of the substance or mixture
REGULATION (EC) No 1272/2008
May damage the unborn child, H360D

2.2 Label elements
REGULATION (EC) No 1272/2008
Hazard pictograms:

Signal word:
Danger

Hazard statements:
H360D May damage fertility or the unborn child.

Precautionary statements:
P280 Wear protective gloves / protective clothing.

2.3 Other hazards
None known.

3 Composition / information on ingredients

3.1 Substances
Not applicable.
3.2 Mixtures
Composition / information on ingredients
CAS: 872-50-4 N-Methyl-2-pyrrolidone < 5.0 %
H314, H335, H360D
Additional information:
For the full text of the H-Statements mentioned in this section, see section 16.

4 First aid measures

4.1 First aid measures
After inhalation: fresh air, consult doctor in case of complaints.
After skin contact: wash off with plenty of water. Remove contaminated clothing.
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.
After swallowing: drink water (two glasses at most). Consult doctor if feeling unwell.

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

4.3 Indication of any immediate medical attention and special treatment needed
No information available.

5 Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media:
For this mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters
Special protective equipment for firefighters:
In the event of fire, wear self-contained breathing apparatus.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapours, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions
No special precautionary measures necessary.
6.3 Methods and materials for containment and cleaning up
Observe possible material restrictions! Take up with liquid-absorbent and neutralising material. Dispose of properly. Clean up affected area.

6.4 Reference to other sections
Indications about possible material restrictions see sections 7 and 10 and about waste treatment see section 13.

7 Handling and storage

7.1 Precautions for safe handling
Advice on safe handling:
Observe label precautions.
Hygiene measures:
Change contaminated clothing. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions:
Tightly closed and dry.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8 Exposure controls / personal protection

8.1 Control parameters
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

8.2 Exposure controls
Engineering measures:
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See section 7.1.
Individual protection measures:
General protective and hygienic measures:
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately. Avoid contact with the eyes and skin.
Respiratory protection:
In case of good room ventilation, not necessary.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Protection of hands:
Protective gloves.
Material of gloves:
Chemical protection gloves are to be selected according to the concentration and quantity of the hazardous substance concentration and quantity in workplace.
The glove material has to be impermeable and resistant to the product / the substance / the preparation.
The protective gloves to be used must comply with the specifications of EC

Eye protection:
Tightly sealed goggles

Body protection:
lab coat

### 9 Physical and chemical properties

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless to slightly bluish</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>3.6 – 3.8</td>
</tr>
<tr>
<td>Melting point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>100 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>No information available</td>
</tr>
<tr>
<td>Density (solid)</td>
<td>ca. 1.003 g/cm³</td>
</tr>
<tr>
<td>Melting point</td>
<td>No information available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not classified as explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

#### 9.2 Other data

No other data available.

### 10 Stability and reactivity

#### 10.1 Reactivity

No further relevant information available.

#### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

#### 10.3 Possibility of hazardous reactions

When used as intended, no dangerous reactions are to be expected.
10.4 **Conditions to avoid**
Light, heat, moisture (will not cause a dangerous reaction, but destroys the quality of the product).

10.5 **Incompatible materials**
Heavy metal salts, complex forming agents and catalases (will not cause a dangerous reaction, but destroys the quality of the product).

10.6 **Hazardous decomposition products**
No dangerous decomposition products known.

11 **Toxicological information**

11.1 **Information on toxicological effects**

**Acute toxicity**
- N-methyl-2-pyrrolidone
  - oral LD₅₀ 3598 mg/kg (rat)
  - inhalative LC₅₀ >5.1 mg/l (rat)

**Skin corrosion/irritation**
Risk of skin resorption.
- N-methyl-2-pyrrolidone
dermal LD₅₀ 8000 mg/kg (rabbit)

**Serious eye damage/irritation**
No information available.

**Respiratory or skin sensitisation**
No information available.

**Germ cell mutagenicity**
No information available.

**Carcinogenicity**
No information available.

**Reproductive toxicity**
- N-methyl-2-pyrrolidone (Repr. 1B)
  - May damage the unborn child.

**STOT-single exposure**
May cause respiratory irritation.

**STOT-repeated exposure**
No specific target organ toxicant.

**Aspiration hazard**
No information available.

11.2 **Additional information**
On the basis of the morphology of the product, no hazardous properties are to be expected when it is handled and used with appropriate care. Handle in accordance with good industrial hygiene and safety practice.
12 Ecological information

12.1 Toxicity
bluegill (Lepomis macrochirus) LC50 832 mg/l/96h
gold orfe (Leuciscus idus) LC50 >500 mg/l/96h
green alga (Desmodesmus subspicatus) IC50 >500 mg/l/72h
invertebrates (Daphnia magna) EC50 4897 mg/l/48h

12.2 Persistence and degradability
90%/20d easily biologically degradable.

12.3 Bioaccumulative potential
Distribution: log P(o/w): ≤ 4 (for N-methyl-2-pyrrolidone)
There is no bioaccumulation expected.

12.4 Mobility in soil
No further relevant information available.

12.5 Results of PBT and vPvB assessment
Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

12.6 Other adverse effects
No further relevant information available.

13 Disposal considerations

13.1 Waste treatment methods
Dispose of packaging according to applicable local, state, and federal regulations. Packaging’s that may not be cleansed are to be disposed of in the same manner as the product.

14 Transport information

This product is part of a kit. Information in this section refers to the kit as a whole.

14.1 UN No.
No dangerous good in sense of this transport regulation.

14.2 UN Proper shipping name
No dangerous good in sense of this transport regulation.

14.3 Class
No dangerous good in sense of this transport regulation.

14.4 Packing group
No dangerous good in sense of this transport regulation.
14.5 Environmental hazards
No.

14.6 Special precautions for user
No.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant.

15 Regulatory information

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

EU regulations
Major Accident Hazard: SEVESO III
Not applicable
Employment restrictions:
Observe employment restrictions in accordance with the youth employment protection regulations (94/33/EC).
Substances of very high concern (SVHC):
This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH).

National legislation
Water hazard class:
Water hazard class 1 (slightly hazardous for water)
Storage class:
10 - 13

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases:
H314   Causes severe skin burns and eye damage.
H335    May cause respiratory irritation.
H360D    May damage fertility or the unborn child.

Department issuing SDS:
Safety Representative

Contact:
LDN

Trade Name: Substrate Solution