SAFETY DATA SHEET

This Safety Data Sheet contains information concerning the potential risks to those involved in handling, transporting and working with this material, as well as describing potential risks to the environment. This information must be made available to those who may come into contact with the material or are responsible for the use of the material.

This Safety Data Sheet is prepared in accordance with formatting described in the REACH Regulation (EC) No 1907/2006 and described in CLP Regulation (EC) No 1272/2008.

SECTION I. Identification of the substance /mixture and the company/undertaking

1.1 Product Identifier

Product Name: **SYN-FEMTO- Chemiluminescent substrate single bottle**
Product Number: **SYN-FEMTO**
Brand: **Synoptics Ltd**
Chemical Name: Aqueous Solution of 5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione (Luminol) S, Dimethyl Sulfoxide, Hydrogen Peroxide, Inorganic Buffer salts, and Enhancers and Stabilizers.

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

Identified uses: For professional use only

1.3 Details of the supplier of the safety data sheet

Company: Synoptics Ltd
Beacon House
Nuffield Road
Cambridge, Cambridgeshire
CB4 1TF, UK
Telephone: +44 (0) 1223 727123
Fax: +44 (0) 1223 727101
Email address: support@syngene.com

1.4 Emergency telephone number

Contact number: +44 (0) 1223 727123 (office hours only)

SECTION 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification in accordance with the Classification Labelling and Packaging Regulation EC (no) 1272/2008:

2.2 Label Elements

This mixture is not considered hazardous and is not required to be labelled in accordance with EC directives or respective national laws.

2.3 Other hazards: none

SECTION 3. Composition/Information on Ingredients

3.2 Mixtures
Form: Liquid

This product contains the following chemicals, which are defined in the following table:

Dangerous Component	EINECS OR ELINCS No.	CAS No.	CONTENT (WEIGHT PERCENT)	EU HAZARD SYMBOL LETTERS	R PHASES
5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione	208-309-4	521-31-3	<1%	N/A	N/A
Dimethyl Sulfoxide	200-664-3	67-68-5	<1%	N/A	N/A
Non-hazardous Enhancers and Stabilizers	Mixture	Mixture	<1%	N/A	N/A
Inorganic Buffer Salts	Mixture	Mixture	<5%	N/A	N/A
Hydrogen Peroxide	Mixture	Mixture	<1.0%	N/A	N/A

Identification of Components Not Classified as Dangerous:

Non-Dangerous Component	EINECS OR ELINCS No.	CAS No.	CONTENT (WEIGHT PERCENT)	EU HAZARD SYMBOL LETTERS	R PHASES
Water	231-791-2	7732-18-5	>90%	N/A	N/A

SECTION 4. First Aid Measures

4.1 Description of first aid measures
If exposed keep patient calm and seek immediate medical advice where irritation persists. Have product container or label at hand. Show this safety data sheet to doctor/physician in attendance.

If inhaled
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Get medical advice/attention.

In case of skin contact
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse.

In Case of eye contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical advice/attention.

If Swallowed
Do NOT induce vomiting. Rinse out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical advice/attention if irritation persists.

SECTION 5. Fire-Fighting Measures

5.1 Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical powder or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Precautions for fire-fighters
Wear self-contained breathing apparatus, where appropriate.

5.4 Further information
No data available

SECTION 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe area.

6.2 Environmental precautions
Do not let undiluted product or large quantities enter drains or water course. Inform responsible authorities as appropriate.

6.3 Methods and materials for containment and cleaning up
absorb any spilled liquid with appropriate absorbent. Using brush sweep up and shovel carefully into suitably labelled closed containers for disposal to local regulations. Wash spillage site with water and appropriate detergent.

6.4 Reference to other sections
For disposal refer to section 13.

SECTION 7. Handling and Storage

7.1 Precautions for safe handling
Ensure adequate ventilation. Wear appropriate personal protective equipment provided. Avoid formation of dust and aerosols. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities

Store in the dark at 2-8^{o}C.

7.3 Specific end uses

Recommend restriction to professional users only.

SECTION 8. Exposure controls/Personal Protection

8.1 Control Parameters

Components with workplace control parameters

TWA Time Weighted Average Concentration (long Term Exposure Limit)
STEL Short Term Exposure Limit
LTEL Long Term Exposure Limit

Component	CAS-no	Value
Hydrogen Peroxide	Mixture	TWA 1ppm (1.4mg/m3) STEL 2ppm

8.2 Exposure controls

Appropriate engineering controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal protective equipment

Eye/face protection

Avoid exposure to liquid splashes mists or vapours. Use face shield and/or safety glasses for eye protection complying with appropriate government standards such as EN166 (EU).

Skin protection

Handle with gloves. Inspect gloves prior to use to ensure adequate protection. Use proper glove removal technique to avoid skin contact with substance/mixture. Dispose of contaminated gloves after use in accordance with local and national applicable laws and good laboratory practices. Wash and dry hands thoroughly after handling.

Body protection

Wear appropriate impervious personal protective equipment provided as per general industrial hygiene practice and good laboratory practices.

SECTION 9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

a) Appearance Form:	Clear colourless liquid
b) Odour:	none
c) Odour threshold:	Not available
d) pH:	>7
e) melting point/freezing point:	Essentially that of water
f) Initial boiling Point and Boiling Range:	Essentially that of water
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (soild, gas)	No data available
j) Upper/lower flammability limits:	No data available
k) Vapour pressure:	No data available
l) Vapour density	No data available
m) Relative density	equal to 1.15
n) solubility	Soluble
o) Partition coefficient	No data available
p) Autoignition temperature	No data available
q) Decomposition temperature	No data available
r) viscosity	No data available
s) Explosive properties	No data available
t) Oxidising properties	None

SECTION 10. Stability and Reactivity

10.1	**Reactivity**	No data available
10.2	**Chemical stability**	No data available
10.3	**Possibility of hazardous reactions**	No data available
10.4	**Conditions to avoid**	Strong acids, strong oxidizing agents
10.5	**Incompatible materials**	No data available
10.6	**Hazardous decomposition products**	Nitrogen oxides, carbon monoxide, carbon dioxide. Heating above 100^{o}C, Sulphur dioxide is evolved from this substrate. Hazardous thermos-oxidative degradation products from DMSO include formaldehyde, methyl mercaptan and Sulphur oxide.

SECTION 11. Toxicological Information

11.1 Information on toxicological effects

Toxicological information for this product as a whole does not exist, below is data for the individual components.

Luminol: RTECS #TH8890060

Dimethyl Sulfoxide: RTECS #PV6210000

Acute Toxicity	Toxicity test	Exposure route	Dose	Observed effect
5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione	LD (rat)	Oral	>500mg/kg	N/A 1
Dimethyl Sulfoxide	Lowest published Toxic concentration (rat)	Inhalation	2.783gm/m3/90 day intermittent	Olfaction:other olfaction effects
	LD50 (Rat)	Oral	14,500mg/kg	Eye: hemorrhage, Eye Conjunctiva irritation
	Lowest published toxic dose (human female)	Skin	1,800 mg/kg	Lung, Thorax, or respiration: Dyspnea lung, Thorax, or respiration: cyanosis blood: other changes
Enhancers and Stabilizers	Not available			
Inorganic Buffer Salts	Not available			
Skin Corrosion/Irritation				
Dimethyl Sulfoxide	Open Irritation test (rabbit)	Skin	500mg/24hour	Mild
Serious Eye Damage/Eye Irritation				
Dimethyl Sulfoxide	Eye Irritation (rabbit)	Eye	500mg/24 hour	Mild

Acute Toxicity	Toxicity test	Exposure route	Dose	Observed effect
Hydrogen Peroxide	LD50 (Rat)	Inhalation	2000mg/m3/4H	Pulmonary Embolism
	LD50 (Rat)	Dermal	4060mg/kg	Pulmonary Embolism
	LD50 (Rat)	Oral	376mg/kg	Peritonitis: Pigmented or nucleated red blood cells; changes in leukocyte (WBC) count
Skin Corrosion/Irritation				
Not avaiable				
Serious Eye Damage/Eye Irritation				
Hydrogen Peroxide	Eye Irritation	Eye	1mg	severe

SECTION 12. Ecological Information

This product has not been tested. Judgements on the expected ecotoxicity of this product have been based upon consideration of its major components.

12.1 Toxicity No data available
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 other adverse effects No known significant effects or critical hazards.

SECTION 13. Disposal Considerations

13.1 Waste treatment methods
Product Offer surplus. Dispose of non-recyclable substances via a licensed waste material processor.
Contaminated packaging Dispose of as unused product.

SECTION 14. Transport Information

14.1 UN Number Not listed
14.2 UN proper shipping name Not listed
14.3 Transport hazard class(es) Not listed
14.4 Packing group Not listed
14.5 Environmental hazards Not listed

SECTION 15. Regulatory Information

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

Not required

15.2 Chemical Safety Assessment

A chemical Safety Assessment has not been carried out for this product.

SECTION 16. Other information

Further information

The information herein is provided in good faith and is correct to the best of our knowledge but makes no representation as to its completeness or accuracy. This safety data sheet is intended for use only as a guide for the appropriate precautionary handling of material by suitably trained persons.

Synoptics Ltd shall not be held liable for any loss, injury or damage which may result from its use.

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