SAFETY DATA SHEET

Ninhydrin 3.5% solution

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identification
Ninhydrin 3.5% solution

1.2 Relevant identified uses of the substance or mixture and uses advised against
In vitro laboratory use

1.3 Details of the supplier of the safety data sheet
Rosco Diagnostica ApS
Stensmosevej 24A
DK-2620 Albertslund
Denmark
Tel: (+45) 93 40 65 65
www.rosco-diagnostica.com
info@rosco-diagnostica.com

1.4 Emergency telephone number
(+45) 93 40 65 65

Section 2: Hazards Identification

2.1 Classification of the substance or mixture
Highly flammable, harmful by ingestion, causes serious eye damage, may cause irritation of airways, eyes and skin and may cause drowsiness or dizziness. It contains Acetone.

2.2 Label elements
Classification according to Regulation (EC) No 1272/2008.

Pictogram	 GHS02: Highly Flammable GHS07: Harmful
Signal Word	Danger
Hazard statement(s)	H225 - H302 - H315 - H317 - H318 - H335 - H336
Precautionary statement(s)	P210 - P261 - P280 - P305 - P351 - P338

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

The classification is based on data regarding the individual substances, where possible by bridging principles or adjusted minimum classification.

2.3 Other hazards

Harmful and irritant.

Section 3: Composition/Information on Ingredients

Contains: Classification of individual substances.

% w/w	Substance Name	CAS-no.	EINECS/ELINCS	Hazard class and category code(s)	Hazard statement(s)
3.5	Ninhydrin	485-47-2	207-618-1	Acute Tox. 4 Skin Irrit. 2 Eye Irrit. 2	H302 H315 H317 H319 H335
48	Acetone	67-64-1	200-662-2	Flam. Liq. 2 STOT SE 3 Eye Irrit. 2	H225 H336 H319 EUH066
48	Butan-1-ol	71-36-3	200-751-4	Flam. Liq. 3 Acute Tox. 4 STOT SE 3 STOT SE 3 Skin Irrit. 2 Eye Dam. 1	H226 H302 H335 H336 H315 H318

Wording of hazards statements - see section 16.

Section 4: First-Aid Measures

4.1 Description of first aid measures

Inhalation	Move the affected person to fresh air. If symptoms persist, seek medical advice.
Skin contact	Remove contaminated clothing. Wash skin with water and mild soap. If irritation persists, seek medical attention.

Eye contact	Flush with water or physiological salt water for at least 15 minutes, holding eye lids open, remember to remove contact lenses, if any. If irritation persists, seek medical attention.
Ingestion	Rinse mouth and drink plenty of water. In case of discomfort, seek medical attention.
Burns	Flush with water until pain ceases. Do not remove clothes if attached to skin. If medical attention is needed, flush inflicted area, until medical doctor is present.

4.2 Most important symptoms and effects, both acute and delayed

Irritation of lungs, skin, eyes and mucous membranes.
Prolonged inhalation of vapours may result in inflammation of the respiratory system and gastrointestinal tract, corrosion of teeth and damage of liver, kidneys, blood and central nervous system.

4.3 Indication of any immediate medical attention and special treatment needed

Show this Safety Data Sheet to a physician or emergency ward.

Section 5: Fire-Fighting Measures

5.1 Extinguishing media

Use extinguishing media that are appropriate to circumstances and the surrounding environment, ex. carbon dioxide (CO2), dry chemical, sand, foam or water fog. Do not use water jet.

5.2 Special hazards arising from the substance or mixture.

Do not breathe smoke fumes. In case of fire, the products may form hazardous decomposition such as oxides of carbon. Remove containers if possible or keep them cool by spraying with water.

5.3 Advice for fire-fighters

When entering burning area wear self-contained breathing apparatus.

5.4 Other information

No available data.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment – see section 8. Avoid breathing fume/gas/mist/vapours/spray. Ventilate area of leak or spillage. In case of fire: Evacuate area. Remove sources of ignition.

6.2 Environmental precautions

Do not empty into drain – see section 12. Inform appropriate authorities in accordance with local regulations.

6.3 Methods and material for containment and cleaning up

Take up with wet paper, absorbent material (e.g. general-purpose binder) and place in marked container for disposal. Clean with water. Further handling of spillage – see section 13.

6.4 Reference to other sections

Removal – see section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Avoid breathing vapours. Provide efficient ventilation. Avoid contact with skin, eyes and clothing. Change contaminated clothes. Wash hands and contaminated area with water and mild soap after use. There shall be access to water and eye wash fountain.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-closed original container and in a flammable liquid storage area. Keep dry and cool (2-8C°) and separated from oxidizing agents. Keep out from the reach of children.

7.3 Specific end use(s)
Use in laboratory. See section 1.

Section 8: Exposure Controls/Personal Protection

8.1 Exposure limits

Substance	8-hour TWA	15-min STEL
Acetone	500 ppm=1210 mg/m^3	1500 ppm=3620 mg/m^3
Butan-1-ol (Sk)	-	50 ppm = 154 mg/m^3 SK= Can be absorbed through skin

8.2 Exposure controls

Appropriate measures
Avoid breathing vapours. Avoid contact with skin eyes and clothing. Appropriate engineering controls: Provide efficient ventilation e.g. by working in a fume cupboard. General practice of industrial hygiene. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Access to emergency shower.

Personal Protective Equipment
Respiratory protection:
Normally not necessary if working in fume cupboard. In case of working in not adequate ventilated areas, use an approved mask with a gas filter: A. The filter has a limited lifetime and must be changed. Read the instructions.

Skin protection:
Wear protective gloves of e.g. butyl rubber or nitrile rubber. Breakthrough time: 3 hours.

Eye protection:
Wear tight fitting safety goggles when risk of eye contact.

Environmental exposure controls:
Avoid release to the environment. Do not empty into drain.

9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Clear, yellow liquid
b)	Odour:	Characteristic alcohol
c)	Odour threshold	No available data
d)	pH	No available data
e)	Melting point/freezing point (C°)	No available data
f)	Initial boiling point and boiling range(C°)	No available data
g)	Flash point	<21
h)	Evaporation rate (water = 1)	No available data
i)	Flammability (solid, gas)	No available data
j)	Upper/lower flammability or explosive limit (vol-%)	No available data
k)	Vapour pressure (mmHg, 20°C)	No available data
l)	Vapour density (Water=1)	No available data
m)	Relative density (g/ml) v/25°C	<1
n)	Water solubility	Miscible with water
o)	Solubility others	-
p)	Partition coefficient: n-octanol/water	No available data
q)	Auto-ignition temperature(C°)	No available data
r)	Decomposition temperature	No available data

s)	Viscosity	No available data
t)	Explosive properties	No available data
u)	Oxidising properties	No available data

9.2 Other information
None relevant

10: Stability and Reactivity

10.1 Reactivity
No specific test data related to reactivity available for this product.

10.2 Chemical Stability
Stable under the recommended storage conditions (see section 7).

10.3 Possibility of hazardous reactions
Vapours can be ignited by a spark, a hot surface or a glow. Vapours are heavier than air.

10.4 Conditions to avoid
Formation of sparks and glows. Excessive heating and sources of ignition.

10.5 Incompatible materials
May react strongly with oxidizing agents, acids and alkaline substances.

10.6 Hazardous decomposition products
When heated to high temperatures (decomposition) it emits toxic fumes such as oxides of carbon.

11: Toxicological Information

11.1 Information on toxicological effects acute toxicity
Information on likely routes of exposure: lungs, skin and gastrointestinal tract.

Symptoms:

Inhalation	Vapours may cause irritation to the airways. May induce discomfort, nausea, dizziness, headache, narcosis, and unconsciousness.
Skin	May cause irritation with redness. Degreases skin.
Eyes	May cause irritation with redness, pain and blurred vision.
Ingestion	May irritate the mucous membranes. May cause symptoms mentioned for “inhalation”, including nausea, vomiting and diarrhoea.
Chronic effect	Prolonged or frequent exposure to vapours of volatile compounds may result in damage of liver, kidneys, blood and central nervous system. Prolonged or frequent contact can cause eczema and inflammation of the skin as a result of degreasing.

Respiratory or skin sensitisation
Repeated or prolonged contact may cause skin sensitisation.

Germ cell mutagenicity
No available data

Carcinogenicity
No available data

Reproductive toxicity
No available data

STOT-single exposure

No available data

STOT-repeated exposure
No available data

Aspiration hazard
Not classified as aspiration hazard. Possible aspiration hazard if swallowed (can enter lungs and cause damage).

Additional information
Prolonged or frequent contact or inhalation can cause eczema and inflammation of the skin and airways.

12: Ecological Information

12.1 Toxicity
Acetone and butan-1-ol are slightly toxic in the aquatic environment. LC_{50} (96h – guppy – fish) > 100 mg/l.

12.2 Persistence and degradability
Acetone and butan-1-ol are readily biodegradable.

12.3 Bioaccumulative potential
Acetone and butan-1-ol are not expected to bioaccumulate.

12.4 Mobility in soil
Soluble in water and good mobility in the aquatic systems is expected.

12.5 Other adverse effects
None known

13: Disposal Considerations

13.1 Waste treatment measures
Disposal should be according to local, state or national legislation. Dispose though authority facilities or pass to chemical disposal company. The preparation is to be considered as hazardous waste.

EWC Code: 16 05 08

14: Transport Information

Not dangerous goods (ADR/RID).

14.1 UN number
1993

14.2 UN proper shipping name
ADR/RID: Flammable liquid, n.o.s (Aceton and butan-1-ol)
IMDG: Flammable liquid, n.o.s (Aceton and butan-1-ol)
IATA: Flammable liquid, n.o.s (Acetone and butan-1-ol)

14.3 Transport hazard class(es)
3

14.4 Packing group
II

14.5 Environmental hazards
None

14.6 Special precautions for user
No special precautions required

14.7 Transport for bulk according to Annex II of MARPOL and the IBC Code
Not relevant.

15: Regulatory Information

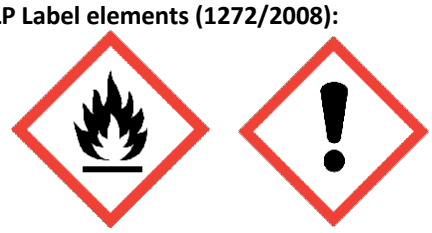
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety data sheet complies with the requirements of Regulation (EU) 1907/2006.

Must not be used by persons under 18 years of age.
The employer shall assess the working conditions and, if there is any risk to the safety or health and any effects on the pregnancy or breastfeeding of workers, take the necessary measures to adjust the working conditions (Directive 92/85/EEC).

15.2 Chemical Safety Assessment
A Chemical Safety Assessment (CSA) is not required.

16: Other Information

CLP Label elements (1272/2008):



GHS02: Highly Flammable GHS07: Harmful

Hazard statements mentioned in section 2 & 3:
H225: Highly flammable liquid and vapour.
H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
EUH66: Repeated exposure may cause skin dryness or cracking.

Precautionary statement(s)
P233: Keep container tightly closed.
P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P261: Avoid breathing fume/gas/mist/vapours/spray.
P270: Do no eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

Abbreviations:

CMR = Carcinogenicitet, mutagenicitet og reproduktionstoksicitet
CSR = Chemical Safety Report
EC_{50} = Effect Concentration 50 %
DNEL = Derived No-Effect Level
FW = Fresh Water
LC_{50} = Lethal Concentration 50 %
LD_{50} = Lethal Dose 50 %
PBT = Persistent, Bioaccumulative, Toxic
PNEC = Predicted No-Effect Concentration
TD_{Lo} = Toxic Dose Low
vPvB = very Persistent, very Bioaccumulative

Training Advice
No special training required. However, the user should be well instructed in the execution of the task, be familiar with this Safety Data Sheet and have normal training in the use of personal protective equipment.

Additional information
The information provided on this Safety Data Sheet is correct to the best of our knowledge. The information given is intended only as a guide for safe handling, storage, processing, transport and disposal and is not to be considered as a warranty or quality specification. The information relates only to the specific product and cannot be used in combination with other products unless specified.