SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 *Product identifiers*

Product name: **BENEDICT'S REAGENT**

CAS-No.: **452-67-5**

Product Number: **A66126**

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

Identified uses: Laboratory chemicals, Manufacture of substances

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

Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR, UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

1.4 *Emergency telephone number*

Emergency Phone #: **+44 (0)845 1200 506**

2. HAZARDS IDENTIFICATION

2.1 *Classification of the substance or mixture*

no data available

2.2 *Label elements*

no data available

2.3 *Other hazards* – Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 *Substances*

2,5-Difluorotoluene

CAS-No.: **452-67-5**

EC-No.: **207-205-6**

Index-No.: **-**

Sodium carbonate

CAS-No.: **497-19-8**

EC-No.: **207-838-8**

Index-No.: **011-005-00-2**

Copper sulphate pentahydrate

CAS-No.: **7758-99-8**

EC-No.: **231-847-6**

Index-No.: **029-004-00-0**

Trisodium citrate

CAS-No.: **6132-04-3**

EC-No.: **200-675-3**

Index-No.: **-**

Water

CAS-No.: **7732-18-5**

EC-No.: **231-791-2**

Index-No.: **-**

3.2 *Mixtures*

Component	Classification	Concentration
2,5-Difluorotoluene	F, R11	>= 1 - <= 2 %
Sodium carbonate	-	>= 8 - <= 10 %
Copper sulphate pentahydrate	Xn, N, R22, R36/38, R50/53	>= 1 - <= 2 %
Trisodium citrate	-	>= 14 - <= 15 %
Water	-	>= 70 %

4. FIRST AID MEASURES

4.1 *Description of first aid measures*

General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled:

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact:

Wash off with soap and plenty of water.

In case of eye contact:

Flush eyes with water as a precaution.

If swallowed:

Never give anything by mouth to an unconscious person. Rinse mouth with water.

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

no data available

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

no data available

5. FIRE-FIGHTING MEASURES

5.1 *Extinguishing media*

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical 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 for fire fighting if necessary.

5.4 *Further information*

no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 *Personal precautions, protective equipment and emergency procedures*

Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

6.2 *Environmental precautions*

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 *Methods and materials for containment and cleaning up*

Keep in suitable, closed containers for disposal.

6.4 *Reference to other sections*

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 *Precautions for safe handling*

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

7.2 *Conditions for safe storage, including any incompatibilities*

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 *Specific end uses*

no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 *Control parameters*

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 *Exposure controls*

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses

Skin protection

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

Body Protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance: **Form**: Liquid **Colour**: Clear

b) Odour: no data available

c) Odour Threshold: no data available

d) pH: no data available

e) Melting/freezing point: Melting point/range: no data available

f) Initial boiling point and boiling range: no data available

g) Flash point: no data available

h) Evaporation rate: no data available

i) Flammability (solid, gas): no data available

j) Upper/lower flammability or explosive limits: no data available

k) Vapour pressure: no data available

l) Vapour density: no data available

m) Relative density: 1.195 g/cm^3

n) Water solubility: no data available

o) Partition coefficient: n-octanol/water: 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) Oxidizing properties: no data available

9.2 *Other safety information*

no data available

10. STABILITY AND REACTIVITY

10.1 *Reactivity*

no data available

10.2 *Chemical stability*

Stable under recommended storage conditions.

10.3 *Possibility of hazardous reactions*

no data available

10.4 *Conditions to avoid*

no data available

10.5 *Incompatible materials*

Strong oxidizing agents

10.6 *Hazardous decomposition products*

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides, Hydrogen fluoride, Copper oxides

11. TOXICOLOGICAL INFORMATION

11.1 *Information on toxicological effects*

Acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure

Target Organs Liver, Kidney, Blood. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

no data available

12. ECOLOGICAL INFORMATION

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 *Results of PBT and vPvB assessment*

no data available

12.6 *Other adverse effects*

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 *Waste treatment methods*

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 *UN-Number*

ADR/RID: 3082 IMDG: 3082 IATA: 3082

14.2 *UN proper shipping name*

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Copper sulphate pentahydrate)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Copper sulphate pentahydrate)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Copper sulphate pentahydrate)

14.3 *Transport hazard class(es)*

ADR/RID: 9 IMDG: 9 IATA: 9

14.4 *Packaging group*

ADR/RID: III IMDG: III IATA: III

14.5 *Environmental hazards*

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 *Special precautions for users*

EMS-No: F-A, S-F

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

no data available

15.2 *Chemical Safety Assessment*

Labelling according to EC Directives

Hazard symbols: N Dangerous for the environment

R-phrase(s): R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s): S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

16. OTHER INFORMATION

Text of R-phrases mentioned in Section 3

R11 Highly flammable.

R22 Harmful if swallowed.

R36/38 Irritating to eyes and skin.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.