

Safety Data Sheet (SDS)

GENERIC US MSDS – NO COUNTRY SPECIFIC DATA – NO OEL DATA

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name: DAPI with Antifade Kit

Product SKU: DAPI-0125

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

Use of the substance/mixture: Fluorescence In-Situ Hybridization (FISH) on formalin-fixed paraffin-embedded (FFPE) tissues and hematology samples.

1.3 Details of the supplier of the safety data sheet

Company Name: Empire Genomics Corp.

Address: 3370 Walden Avenue, Suite 114

Depew NY 14043 USA

Telephone: +1 716 856 3873

Fax: +1 716 431 3440

Email: info@empiregenomics.com

Internet: www.empiregenomics.com

1.4 Emergency telephone number

Telephone: +1 716 856 3873

9AM – 5PM (EST)

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to 29 CFR 1910 (OSHA HCS)

Hazard categories:

Long-term (chronic) aquatic hazard: Category 3

Hazard Statements:

Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to 29 CFR 1910 (OSHA HCS)

Hazard pictograms: Not applicable.

Signal Word: Not applicable.

Hazardous ingredients: p-phenylenediamine

Hazard statements: H412 – Harmful to aquatic life with long lasting effects.

Precautionary statements: P273 – Avoid release to the environment.
P501 – Dispose of contents/container to an approved waste disposal plant.

2.3 Other hazards

No additional information available

3. Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture

Hazardous components

| Name | CAS # | EC # | % | Classification |
|--------------------|----------|-----------|--------|------------------|
| Glycerine | 56-81-5 | 200-289-5 | ≤100% | Not applicable |
| p-phenylenediamine | 106-50-3 | 203-404-7 | < 0.1% | Aquatic Haz. – 3 |

4. Composition/information on ingredients

4.1 Description of first aid measures

After inhalation

If inhaled, move person into fresh air and seek medical advice.

After contact with eyes

If contact with the eyes occurs, flush with copious amounts of water for at least 15 minutes while keeping eyes open. Seek medical attention. Remove contact lenses.

After contact with skin

If contact with skin occurs, wash with copious amounts of water and remove contaminated clothing. Seek medical attention. Wash clothing before wearing.

After ingestion

If person is conscious, give large amounts of water to drink. Seek medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

After contact with skin: No data available

After contact with eyes: No data available

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Foam carbon dioxide dry powder

5.2 Special hazards arising from the substance or mixture

Carbon oxides.

Combustible.

Vapors are heavier than air and may spread along floors.

Hydrogen chloride gas.

Sodium oxides.

Mixture with combustible ingredients.

Development of hazardous combustion gases or vapors possible in the event of a fire.

5.3 Advice for firefighters

Wear self-contained breathing apparatus.

Prevent skin contact by wearing appropriate protective clothing.

Suppress gases/vapors with a water jet spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures

General measures

Wear chemical resistant safety goggles, gloves, and rubber boots, as required.

Ensure adequate ventilation.

6.2 Environmental precautions

Do not allow to enter drainage system, surface, or ground water.

6.3 Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Keep in suitable closed container for disposal.

Ventilate area and wash spill site after material pickup is complete.

6.4 Reference to other sections

Safe handling: See Section 7

Personal protection equipment: See Section 8

Disposal: See Section 13

7. Handling and storage

7.1 Precautions for safe handling

Wear personal protective equipment when handling. Ensure adequate ventilation.

Keep containers tightly closed in a dry, cool, and well-ventilated area.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: -20°C
Light sensitive.
Tightly closed.

Storage class: Combustible liquid.

7.3 Specific end use(s)

No additional information available.

8. Exposure controls/personal protection

8.1 Control parameters

| CAS No. | Substance | mg/m ³ | Category | Origin |
|----------|--------------------|-------------------|----------|---|
| 56-81-5 | Glycerine | 5 | TWA | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | 15 | TWA | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | 10 | PEL | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | 5 | PEL | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| 106-50-3 | p-phenylenediamine | 0.1 | TWA | USA. ACGIH Threshold Limit Values (TLV) |
| | | 0.1 | TWA | USA. NIOSH Recommended Exposure Limits |
| | | 0.1 | TWA | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | 0.1 | PEL | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

8.2 Exposure controls

Appropriate engineering controls: Change contaminated clothing.
Wash hands after working with substance.

Protective and hygiene measures: Keep away from foodstuffs, beverages, and food.

| | |
|---|---|
| | Immediately remove contaminated clothing. |
| | Wash hands during breaks and at the end of the work. |
| | Store protective clothing separately. |
| Eye/face protection: | Safety glasses recommended. |
| Hand protection: | Protective gloves must be worn. |
| | The quality of the protective gloves must be chosen specific to the conditions of use. |
| | Gloves should be changed immediately after wetting. |
| Skin protection: | Use of suitable protective clothing. |
| Respiratory protection: | Required when vapors/aerosols are generated. |
| | Recommended filter type: ABEK |
| | Ensure that maintenance, cleaning and testing of respiratory protective devices are performed in accordance with the manufacturer's instructions. |
| Environmental exposure controls: | Avoid release into drains. |

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

DAPI with Antifade

| | |
|--|-------------------|
| Physical state: | Liquid |
| Color: | Clear purple |
| Odor: | No data available |
| pH: | No data available |
| Relative evaporation rate: | No data available |
| Melting point: | No data available |
| Freezing point: | No data available |
| Boiling point: | No data available |
| Flash point: | No data available |
| Auto-ignition temperature: | No data available |
| Decomposition temperature: | No data available |
| Flammability (solid, gas): | No data available |
| Vapor pressure: | No data available |
| Relative vapor density at 20°C: | No data available |
| Relative density: | No data available |
| Solubility: | No data available |

| | |
|------------------------------|------------------------------|
| Viscosity: | No data available |
| Explosive properties: | Not classified as explosive. |
| Oxidizing properties: | No data available |
| Explosive limits: | Not classified as explosive. |

Glycerol

| | |
|--|---|
| Physical state: | Viscous liquid |
| Color: | Clear |
| Odor: | Odorless |
| pH: | ca.5 at 100 g/l at 20°C |
| Relative evaporation rate: | No data available |
| Melting point: | 20°C |
| Freezing point: | No data available |
| Boiling point: | 182°C at 27 hPa |
| Flash point: | 199°C at ca.1,013 hPa |
| Auto-ignition temperature: | 370°C |
| Decomposition temperature: | > 290°C |
| Flammability (solid, gas): | No data available |
| Vapor pressure: | < 0.001 hPa at 20°C |
| Relative vapor density at 20°C: | 3.18 |
| Relative density: | No data available |
| Solubility: | Water solubility – 1,000 g/l at 25°C |
| Viscosity: | No data available |
| Explosive properties: | No data available |
| Oxidizing properties: | None |
| Explosive limits: | Upper explosion limit – 19% (V) at 1013 hPa Lower explosion limit – 2.7% (V) at 1013 hPa |

1x Phosphate Buffered Saline (PBS)

| | |
|-----------------------------------|-------------------|
| Physical state: | Liquid |
| Color: | Clear |
| Odor: | Slight |
| pH: | 7.3-7.5 |
| Relative evaporation rate: | No data available |
| Melting point: | 0°C |

| | |
|--|-------------------|
| Freezing point: | No data available |
| Boiling point: | 100°C |
| Flash point: | Not applicable |
| Auto-ignition temperature: | Not applicable |
| Decomposition temperature: | No data available |
| Flammability (solid, gas): | Not applicable |
| Vapor pressure: | No data available |
| Relative vapor density at 20°C: | > 1.0 |
| Relative density: | No data available |
| Solubility: | Soluble in water |
| Viscosity: | No data available |
| Explosive properties: | No data available |
| Oxidizing properties: | No data available |
| Explosive limits: | No data available |

9.2 Other information

DAPI with Antifade

No additional information available.

Glycerol

Surface tension: ca.63.4 mN/m at 1,000g/l at 20°C

1x Phosphate Buffered Saline (PBS)

No additional information available.

10. Stability and Reactivity

10.1 Reactivity

DAPI with Antifade

No data available.

Glycerol

Forms explosive mixtures with air on intense heating.

1x Phosphate Buffered Saline (PBS)

None.

10.2 Chemical stability

DAPI with Antifade

This product is stable under standard ambient conditions.

Glycerol

This product is stable under standard ambient conditions.

1x Phosphate Buffered Saline (PBS)

This product is stable under standard ambient conditions.

10.3 Possibility of hazardous reactions

DAPI with Antifade

No data available.

Glycerol

Risk of explosion with: halogens, strong oxidizing agents, peroxi compounds, hydrogen peroxide, nitriles, perchloric acid with lead oxides, nitric acid with sulfuric acid.

Risk of ignition or formation of inflammable gases or vapors with: potassium permanganate, hydrides, calcium hypochlorite, fluorine with lead oxides.

Risk of exothermic reaction with: oxides of phosphorus, chromium (IV) oxide, phosphorus halides, acetic anhydride with phosphorous oxychloride with nitrobenzene

1x Phosphate Buffered Saline (PBS)

None.

10.4 Conditions to avoid

DAPI with Antifade

No data available.

Glycerol

Strong heating.

1x Phosphate Buffered Saline (PBS)

Incompatible products.

10.5 Incompatible materials

DAPI with Antifade

Avoid strong oxidizing agents.

Glycerol

No data available.

1x Phosphate Buffered Saline (PBS)

Avoid strong oxidizing agents.

10.6 Hazardous decomposition products

DAPI with Antifade

No data available.

Glycerol

No data available.

1x Phosphate Buffered Saline (PBS)

None under normal conditions.

11. Toxicological information

11.1 Information on toxicological effects

DAPI with Antifade

Acute toxicity: No data available.

| CAS No. | Chemical Name | Exposure Route | Dose | Species |
|----------|--------------------|----------------|--------------|------------|
| 56-81-5 | Glycerine | Oral | 27,200 mg/kg | Rat |
| | | Inhalation | 5,850 mg/l | Rat |
| | | Dermal | 56,750 mg/kg | Guinea Pig |
| 106-50-3 | p-phenylenediamine | Oral | 80 mg/kg | Rat |
| | | Inhalation | 0.92 mg/l | Rat |
| | | Dermal | 300 mg/kg | N/A |

Irritation and corrosivity: No data available.

Sensitizing effects: No data available.

Germ cell mutagenicity: No data available.

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

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity: No data available.

STOT- single exposure: No data available.

STOT- repeated exposure: No data available.

Aspiration hazard: No data available.

Glycerol

Acute toxicity: No data available.

| CAS No. | Chemical Name | Exposure Route | Dose | Species |
|---------|---------------|----------------|--------------|------------|
| 56-81-5 | Glycerine | Oral | 27,200 mg/kg | Rat |
| | | Inhalation | 5,850 mg/l | Rat |
| | | Dermal | 56,750 mg/kg | Guinea Pig |

Irritation and corrosivity: No data available.

Sensitizing effects: No data available.

| | |
|---------------------------------|---|
| Germ cell mutagenicity: | No data available. |
| Carcinogenicity: | IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. |
| Reproductive toxicity: | No data available. |
| STOT- single exposure: | No data available. |
| STOT- repeated exposure: | No data available. |
| Aspiration hazard: | No data available. |

1x Phosphate Buffered Saline (PBS)

| | |
|------------------------------------|--|
| Acute toxicity: | No data available. |
| Irritation and corrosivity: | No data available. |
| Sensitizing effects: | No data available. |
| Germ cell mutagenicity: | No data available. |
| Carcinogenicity: | The ingredients of this product are not listed as carcinogens. |
| Reproductive toxicity: | No data available. |
| STOT- single exposure: | No data available. |
| STOT- repeated exposure: | No data available. |
| Aspiration hazard: | No data available. |

12. Ecological information

12.1 Toxicity

DAPI with Antifade

| | |
|-----------------|--------------------|
| Mixture: | No data available. |
|-----------------|--------------------|

Glycogen

| | |
|-----------------------|---|
| Fish toxicity: | Static test LC50 - Oncorhynchus mykiss (rainbow trout) - 54,000 mg/l - 96 h |
|-----------------------|---|

1x Phosphate Buffered Saline (PBS)

| | |
|-----------------|--------------------|
| Mixture: | No data available. |
|-----------------|--------------------|

12.2 Persistence and degradability

DAPI with Antifade

No data available.

Glycogen

Biodegradability: Aerobic - Exposure time 1 d
Result: 94 % - Readily biodegradable.

Biochemical Oxygen Demand: 870 mg/g

Chemical Oxygen Demand: 1,160 mg/g

Theoretical Oxygen Demand: 1,217 mg/g

1x Phosphate Buffered Saline (PBS)

Persistence is unlikely.

12.3 Bioaccumulative potential

DAPI with Antifade

No data available.

Glycogen

No data available.

1x Phosphate Buffered Saline (PBS)

No data available.

12.4 Mobility in soil

DAPI with Antifade

No data available.

Glycogen

No data available.

1x Phosphate Buffered Saline (PBS)

Likely mobile in soil.

12.5 Results of PBT and vPvB assessment

DAPI with Antifade

No data available.

Glycogen

No data available.

1x Phosphate Buffered Saline (PBS)

No data available.

12.6 Other adverse effects

No additional information available.

13. Disposal considerations

13.1 Waste treatment methods

Dispose in accordance with local, regional, and national environmental regulations.

Leave chemicals in original containers.

14. Transport information

In accordance with ADR/RID/IMDG/IATA/ADN

| ADR | RID | IMDG | IATA | ADN |
|--|----------------|----------------|----------------|----------------|
| 14.1 UN Number | | | | |
| Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| 14.2 UN proper shipping name | | | | |
| Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| 14.3 Transport hazard class(es) | | | | |
| Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| 14.4 Packing group | | | | |
| Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| 14.5 Environmental hazards | | | | |
| Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |

14.6 Special precautions for user

Not applicable.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

15. Regulatory information

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

National regulatory information

United States

| | |
|---|--|
| SARA 313 Components: | Not listed |
| California Prop. 65: | Not listed |
| Massachusetts Right to Know Components: | Glycerine, Water, Sodium Chloride |
| Pennsylvania Right to Know Components: | Glycerine, Disodium Hydrogenorthophosphate Dihydrate, p-phenylenediamine |

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out.

16. Other information

Abbreviations and Acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)

CAS: Chemical Abstracts Service

EC: Effect Concentration

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

IATA: International Air Transport Association

IMDG: International Maritime Code for Dangerous Goods

LC: Lethal Concentration

PBT: persistent, bioaccumulative, toxic

REACH: Registration, Evaluation and Authorization of Chemicals

RID: Regulations concerning the international carriage of dangerous goods by rail

STOT: Specific target organ toxicity

vPvB: very persistent, very bioaccumulative

UN: United Nations

The information contained herein is believed to be correct at time of issue but may not be all-inclusive and should be used as a guide only. Further, it is recommended that the product be handled and used by appropriately trained personnel only. Empire Genomics Corp. shall not be held liable for any damage resulting from handling or from contact with the product.