



Halotech DNA, S.L.

MATERIAL SAFETY DATA SHEET

PRODUCT: DuoVital - Kit for DNA fragmentation assessment in leukocytes

1. IDENTIFICATION OF THE MANUFACTURER

HALOTECH DNA SL.
Parque Tecnológico de Madrid
Santiago Grisolia, 2 - 28760 Tres Cantos (Madrid-Spain)

2. COMPOSITION / INFORMATION OF THE COMPONENTS:

Components n° CAS Phrases R/S

Acridine orange 65-61-2

R20 R21 R22 R40

Propidium Iodide 25535-16-4

3. HAZARD

Acridine Orange: Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

Propidium Iodide exhibits mutagenic properties as demonstrated in *Salmonella typhimurium* using 200 ug/plate and at 25 µM/L with *Saccharomyces cerevisiae*. PI is not currently listed as a carcinogen by NTP, IARC or OSHA but should be treated as such. Symptoms of exposure are undefined but this staining reagent should always be handled using protective gloves, clothing, and eyewear. It was determined to have a LD50 level of 16 mg/kg when administered subcutaneously in mice.

4. FIRST AID

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Propidium iodide could be a potential carcinogen; avoid any contact with skin, eyes, or take internally. Carefully remove and dispose of gloves after use. Remove contaminated clothing and shoes; wash before reuse.

5. FIRE

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

6. ACCIDENTAL SPILLAGE

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

7. HANDLING AND STORAGE

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

8. STAFF EXPOSURE/PROTECTION CONTROLS

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 301.82 g/mole

Color: Not available.

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: Not available.

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Not available.

10. STABILITY AND REACTIVITY

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals:

LD50: Not available.

LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

12. ENVIRONMENTAL INFORMATION

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

13. DISPOSAL CONSIDERATIONS

SUBSTANCE DISPOSAL

Observe all federal, state, and local environmental regulations. Take all necessary precautions to avoid residual waste.

Avoid entry into the drainage system.

14. TRANSPORT INFORMATION

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

15. REGULATORY INFORMATION

R20 R21 R22 R40

R20 Harmful by inhalation.

R21 Harmful in contact with skin.

R22 Harmful if swallowed

R40 Limited evidence of a carcinogenic effect.

16. OTHER INFORMATION

The information in the Material Security Data Sheet was written up according to the Annex III of the Royal Decree 1078/1993 (88/379/CE and 91/155/CE) July 2nd, published in the BOE on September 9th, 1993, actualized by the Order of February 20th, 1995 (93/18/CE), published in the BOE on February 23rd, 1995, as well as in the Royal Decree 363/1995 (67/548/CE) of March 10th, published in the BOE of June 5th, 1995, in which was approved the Regulation on notification of new substances and classification, labeling and packaging of dangerous substances, and the technical Annexes were actualized until the Order of February 21st, 1997 (94/69/CE), published in the BOE of March 10th, 1997. The regulations 96/54/CE and 96/56/CE were also considered.

The information included in this Safety Data Sheet is based on our most upto-date knowledge and in the legislation of the EU and local, and is solely intended to inform regarding aspects of safety; the properties and characteristics indicated herein are not guaranteed. The working conditions are therefore out the company's knowledge and control. The product does not have to be used for aims different from which is specified, without having first written instruction of its handling. It is always responsibility of the user to take the oportune measures to fulfill the exigencies established in the effective legislations. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. It does not represent any guarantee of the properties of the product. The information does not generate any legal nor contractual relation.