

Date of Issue: 18 Jun 2009

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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SUBSTANCE: DNAgard[™]

PRODUCT USE: For Research Use Only. Not for use in diagnostic procedures.

2. COMPOSITION, INFORMATION ON INGREDIENTS

CHEMICAL CHARACTERIZATION

DESCRIPTION: Mixture of substances listed below with non-hazardous additions.

COMPONENT: TRADE SECRET 068136
CAS NUMBER: Not assigned.
PERCENTAGE: <5%

COMPONENT: TRADE SECRET 073750
CAS NUMBER: Not assigned.
PERCENTAGE: <15%

COMPONENT: TRADE SECRET 093272
CAS NUMBER: Not assigned.
PERCENTAGE: <10%

COMPONENT: TRADE SECRET 095204
CAS NUMBER: Not assigned.
PERCENTAGE: <5%

COMPONENT: TRADE SECRET 092239
CAS NUMBER: Not assigned.
PERCENTAGE: <5%

COMPONENT: TRADE SECRET 098892
CAS NUMBER: Not assigned.
PERCENTAGE: <10%

COMPONENT: Ethylenediaminetetraacetic acid disodium dehydrate (EDTA)
CAS NUMBER: 6381-92-6
PERCENTAGE: <5%

COMPONENT: Bis-Tris Free Base
CAS NUMBER: 6976-37-0
PERCENTAGE: <10%

COMPONENT: Sodium Citrate
CAS NUMBER: 6132-04-3
PERCENTAGE: <5%

COMPONENT: FD&C Red 40
CAS NUMBER: 25956-17-6
PERCENTAGE: <0.01%

3. HAZARDS IDENTIFICATION

HAZARD DESCRIPTION: Not applicable.
INFORMATION PERTAINING TO PARTICULAR DANGERS FOR MAN AND ENVIRONMENT: Harmful if swallowed, inhaled or absorbed through skin.

CLASSIFICATION SYSTEM: This classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

NFPA RATINGS (SCALE 0-4):

HEALTH=0*

FIRE=0

REACTIVITY=0

*additional chronic hazards present. For additional information on toxicity, refer to Section 11.

WHMIS RATINGS (SCALE 0-4)

HEALTH=0

FIRE=0

REACTIVITY=0

PHYSICAL FORM: liquid

4. FIRST AID MEASURES

INHALATION: If inhaled, remove to fresh air, consult a physician.

SKIN CONTACT: Immediately wash skin with soap and water, consult a physician.

EYE CONTACT: Flush with copious amounts of water for at least 15 minutes, ensuring eye lids are open. Consult a physician.

INGESTION: If swallowed, wash out mouth with water, provided person is conscious. Drink plenty of water and contact a physician.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water spray. Carbon dioxide, regular dry chemical powder, or appropriate foam.

FIRE FIGHTING: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

PROCEDURE(S) OF PERSONAL PRECAUTION(S): Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

METHODS FOR CLEANING UP: Pick up and arrange disposal without creating dust. Keep in suitable closed containers for disposal.

7. HANDLING AND STORAGE

HANDLING:

User Exposure: Avoid contact with eyes, skin and clothing. Provide appropriate exhaust ventilation at places where dust is formed. Normal measure for preventive fire protection.

STORAGE: Keep container tightly closed in a dry and well-ventilated place. Hygroscopic.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ADDITIONAL INFORMATION ABOUT DESIGN OF TECHNICAL SYSTEMS: No further data; see item 7.

EXPOSURE LIMITS: This product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

GENERAL PROTECTIVE AND HYGENIC MEASURES: Keep away from foodstuffs, beverages and feed. Wash hands thoroughly before and after handling.

BREATHING EQUIPMENT: None required.

VENTILATION: Maintain adequate ventilation at all times. In most circumstances, natural ventilation systems are adequate unless the material is heated, reacted or otherwise changed in some type of chemical reaction, then the use of a local exhaust ventilation system is recommended.

EYE PROTECTION: Wear chemical safety goggles.

CLOTHING: Wear protective clothing.

GLOVES: Wear protective gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

GENERAL INFORMATION:

FORM: Liquid
COLOR: Red
ODOR: Odorless

CHANGE IN CONDITIONS:

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: Undetermined.

FLASH POINT: >235°F / 113°C

IGNITION TEMPERATURE: 842°F / 450°C

AUTO IGNITING: Product is not self-igniting.

DANGER OF EXPLOSION: Product does not present an explosion hazard.

DENSITY AT 20°C (68°F): 1.277 g/cm³

SOLUBILITY IN / MISCIBILITY WITH WATER: Fully miscible.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Exposure to elevated relative humidity conditions above 50% may affect product quality and performance.

HAZARDOUS DECOMPOSITION PRODUCTS: Strong oxidizing agents.

HAZARDOUS POLYMERIZATION: Hazardous decomposition products formed under fire conditions. Carbon oxides, nitrogen oxides (NOx), Hydrogen Chloride gas.

11. TOXICOLOGICAL INFORMATION

TRADE SECRET 068136:

TOXICITY DATA: >20000 mg/kg oral-rat LD50; >14700 mg/kg mouse LD50

LOCAL EFFECTS:

Irritant: inhalation, skin, eyes. May be harmful if swallowed.

CHRONIC EXPOSURE – CARCINOGEN:

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Species: Rat

Route of Application: Subcutaneous

Dose: 2500 mg/kg

Result: Liver:Tumors. Skin and Appendages: Other: Tumors.

Tumorigenic: Carcinogenic by RTECS criteria.

Species: Rat

Route of Application: Implant

Dose: 10 g/kg

Result: Skin and Appendages: Increase in cellular immune response.

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.

Species: Rat

Route of Application: Implant

Dose: 3768 mg/kg

Result: Tumorigenic:Tumors at site or application.

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.

IARC CARCINOGEN LIST:

Rating: Group 3

TRADE SECRET 073750

TOXICITY DATA: Not known

LOCAL EFFECTS:

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE – Not known.

TRADE SECRET 093272

TOXICITY DATA: 475 mg/kg oral-rat LD50.

LOCAL EFFECTS:

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled.

Ingestion: Toxic if swallowed. Target organs: Bone marrow, nerves.

SIGNS AND SYMPTOMS OF EXPOSURE:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE – Not known.

TRADE SECRET 095204

TOXICITY DATA: 36700 µl/kg oral-rat LD50.

LOCAL EFFECTS:

Skin Contact: Immediately flush skin with plenty of water for 15 minutes.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Immediately flush skin with plenty of water for 15 minutes.

If irritation develops, seek medical attention.

Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.

Ingestion: Do not induce vomiting. Get medical aid if irritation or symptoms occur.

SIGNS AND SYMPTOMS OF EXPOSURE:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE – Adverse reproductive effects have been reported in animals.

TRADE SECRET 092239

TOXICITY DATA: 4000 mg/kg oral-rat LD50.

LOCAL EFFECTS:

Skin Contact: Immediately flush skin with plenty of water for 15 minutes.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Immediately flush skin with plenty of water for 15 minutes.

If irritation develops, seek medical attention.

Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.

Ingestion: Do not induce vomiting. Get medical aid if irritation or symptoms occur.

SIGNS AND SYMPTOMS OF EXPOSURE:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE – Not known.

TRADE SECRET 098892

TOXICITY DATA: Not available.

LOCAL EFFECTS:

Skin Contact: May cause skin irritation.

Skin Absorption: No data available.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE – Not known.

COMPONENT: Ethylenediaminetetraacetic acid disodium dehydrate (EDTA)

TOXICITY DATA: 2,000 mg/kg oral-rat LD50.

LOCAL EFFECTS:

Skin Contact: May cause skin irritation.

Skin Absorption: No data available.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE – Not known.

COMPONENT: Bis-Tris Free Base

TOXICITY DATA: Not available.

LOCAL EFFECTS:

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed

SIGNS AND SYMPTOMS OF EXPOSURE:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE – Not known.

COMPONENT: Sodium Citrate

TOXICITY DATA: Not available.

LOCAL EFFECTS:

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CHRONIC EXPOSURE – Not known.

COMPONENT: FD&D Red 40

TOXICITY DATA: Not known.

LOCAL EFFECTS:

Skin Contact: Wash with soap and water. Seek medical attention if irritation occurs.

Skin Absorption: Not available.

Eye Contact: Rinse with water. Seek medical attention if irritation occurs.

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

Ingestion: May be harmful if swallowed.

CHRONIC EXPOSURE – Do not induce vomiting. Get medical aid if irritation or symptoms occur.

CHRONIC EXPOSURE – Not known.

12. ECOLOGICAL INFORMATION

No data available.

13. DISPOSAL CONSIDERATIONS

PRODUCT:

RECOMMENDATION: Must not be disposed of together with household garbage. Disposal should be handled by an approved waste disposal facility.

UNCLEANED PACKAGINGS: Disposal must be according to official regulations.

RECOMMENDED CLEANSING AGENT: Water.

14. TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION: This substance is considered to be non-hazardous for transport.

LAND TRANSPORT ADR: This substance is considered to be non-hazardous for transport.

LAND TRANSPORT RID: This substance is considered to be non-hazardous for transport.

AIR TRANSPORT IATA: This substance is considered to be non-hazardous for transport.

AIR TRANSPORT ICAO: This substance is considered to be non-hazardous for transport.

MARITIME TRANSPORT IMDG: This substance is considered to be non-hazardous for transport.

15. REGULATORY INFORMATION

SARA
SECTION 313 (Specific toxic chemical listings):
None of the ingredients is listed.

TSCA (Toxic Substances Control Act): TRADE SECRET 068136 is listed.
PROPOSITION 65
Chemicals known to cause cancer: TRADE SECRET 068136.

CHEMICALS KNOWN TO CAUSE REPRODUCTIVE TOXICITY:
None of the ingredients are listed.

CANCEROGENICITY CATEGORIES:
EPA (Environmental Protection Agency):
None of the ingredients are listed.
IARC (International Agency for Research on Cancer)
None of the ingredients are listed.
NTP (National Toxicology Program):
None of the ingredients are listed.
TLV (Treshold Limit Value established by ACGIH):
None of the ingredients are listed.

MAK (German Maximum Workplace Concentration):

None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

PRODUCT RELATED HAZARD INFORMATION:

The product has been classified and marked in accordance with directives on hazardous materials.

HAZARD SYMBOLS:

Irritant

RISK PHRASES:

Irritating to eyes and skin.

SAFETY PHRASES:

Keep away from food, drink and animal feeding-stuffs.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing.

If swallowed, seek medical advice immediately and show this container or label.

NATIONAL REGULATIONS:

TECHNICAL INSTRUCTIONS (air):

<u>CLASS</u>	<u>SHARE IN %</u>
IV	<10%

16. OTHER INFORMATION

For research use only. Not for use in diagnostic procedures.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.