MATERIAL SAFETY DATA SHEET

Section 1- Manufacturer and Product

Genisphere Inc.
A Datascope Company

2801 Sterling Drive
Hatfield, PA 19440

NFPA RATING
Health **3**
Flammability 0
Reactivity 1

TELEPHONE FOR INFORMATION: Toll free in USA call 1-877-888-3362
Local and International call 1-215-996-3000

Laboratory Reagents

Product Name: DNA Chips: Genes to Disease / EDU Kit

Product No.: GDC000, GDCRF0

Section 2- Composition / Information on Ingredients

Bottle #	Bottle Label	Ingredient	CAS Number	% by WT
1	Gene 1	Phenylphthalein	77-09-8	0.008%
		Methanol	67-56-1	0.008%
		Low melt Agarose	9012-36-6	1.0%
		Water	7732-18-5	98.984%
2	Gene 2	Phenylphthalein	77-09-8	0.008%
		Thymolphthalein	125-20-2	0.008%
		Methanol	67-56-1	0.088%
		Low melt Agarose	9012-36-6	1.0%
		Water	7732-18-5	98.896%
3	Gene 3	Thymolphthalein	125-20-2	0.008%
		Methanol	67-56-1	0.008%
		Low melt Agarose	9012-36-6	1.0%
		Water	7732-18-5	98.984%
4	Gene 4	Methanol	67-56-1	0.008%
		Low melt Agarose	9012-36-6	1.0%
		Water	7732-18-5	98.992%
5	Gene 5	Phenylphthalein	77-09-8	0.008%
		Methanol	67-56-1	0.008%
		Low melt Agarose	9012-36-6	1.0%
		Water	7732-18-5	98.984%
6	Gene 6	Thymolphthalein	125-20-2	0.003%
		Methanol	67-56-1	0.003%
		Low melt Agarose	9012-36-6	1.0%
		Water	7732-18-5	98.996%
7 & 8	Hybridization Solution	NaOH	1310-73-2	1.6%
		Water	7732-18-5	98.4%

Section 3 - Hazards Identification

Physical State and Appearance	Bottles 1-6: clear to slightly colored gel at room temperature, which melts to a liquid at or above 37° (98.6°F).	
	Bottles 7 – 8: Clear colorless liquid.	
Emergency Overview	Bottles 1-6:	MAY BE HARMFUL IF INHALED. MAY CAUSE EYE AND SKIN IRRITATION. SUSPECT CANCER HAZARD. CONTAINS MATERIAL WHICH MAY CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA
	Bottles 7-8:	DANGER !POISON! CAUSES EYE AND SKIN BURNS AND IRRITATION. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES RESPIRATORY TRACT IRRITATION.
Routes of Entry	All bottles:	Dermal contact, eye contact, inhalation, ingestion.
Potential Acute Health Effects	All bottles:	Eyes: Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering and itching. Seek medical attention immediately. Skin: Hazardous in case of skin contact. Inhalation: Hazardous in case of inhalation. Ingestion: Hazardous in case of ingestion.
Potential Chronic Health Effects Carcinogenic Effects:		Classified 2B (possible for human) by IARC [Phenylphthalein]. Classified 2 (reasonably anticipated to be human carcinogens) by NTP [Phenylphthalein]. ADDITIONAL INFORMATION – SEE TOXICOLOGICAL INFORMATION (Section 11).
Medical Conditions Aggravated By Overexposure:		Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or may human organs.

Section 4 - First Aid Measures

Eye contact	All bottles:	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
Skin contact	All bottles:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation or burning is present or developes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

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

Ingestion	All bottles:	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Section 5 - Fire Fighting Measures / Explosion Data

GENERAL INFORMATION: As in any fire, wear a self-contained breathing apparatus in pressure demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exponsed containers cool. Contact with metals may evolve flammable hydrogen gas (bottles 7-8 only).

FLASH POINT: Not applicable.

EXTIGUISHING MEDIA: Use water spray to cool fire exposed containers. Substance is non-combustible; use agent most appropriate to extinguish surrounding fire.

AUTOIGNITION TEMPERATURE: Not applicable.

EXPLOSION LIMITS, LOWER / UPPER: Not available / not available.

NFPA RATING: Health: 3, Flammability: 0, Instability: 1

Section 6 – Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills / Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches with lead to waterways. Clean up spills immediately, observing percautions in the Protective Equipment section. Provide ventilation.

Section 7- Handling and Storage

Handling: Wash thoroughly after handling. Eo not get in eyes, on skin, or on clothing. Keep containers tightly closed. Use with adequate ventilation. Do not breath spray or mist.

Storage: Keep container closed when not in use. Store in a cool, dry, well ventilated area away from incompatible substances. Keep away from strong acids and bases. Keep away from metals. Keep away from flammable liquids. Keep away from organic halogens.

Section 8- Exposure Controls / Personal Protection Information

Engineering Controls: Provide exhaust ventilation or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear chemical goggles.

Skin / body: Wear appropriate protective gloves to prevent skin exposure. Wear a lab coat.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

GENERAL PRACTICES: Good laboratory technique should be used when handling this product. Do not mouth pipette! Observe appropriate chemical hygiene and avoid contact with skin and eyes. Do not eat, drink or smoke while working with reagents. Upon completion of work activities involving this product, wash any exposed body areas thoroughly with soap and water.

Exposure Limits:

Phenylphthalein: not available.

Thymolphthalein: not available.

Methanol: ACGIH (United States, 1994). Skin
TWA: 262 mg/m^3
STEL: 328 mg/m^3
OSHA (Unites States, 1989). Skin
TWA: 260 mg/m^3
STEL: 325 mg/m^3
ACGIH (United States, 1994). Skin
STEL: 328 mg/m^3 15 minute(s).
STEL: 250 ppm 15 minute(s).
TWA: 262 mg/m^3 10 hour(s).
TWA: 200 ppm 10 hour(s).
NIOSH (United States, 1994). Skin
STEL: 325 mg/m^3 15 minute(s).
STEL: 250 ppm 15 minute(s).
TWA: 260 mg/m^3 10 hour(s).
TWA: 200 ppm 10 hour(s).
OSHA Final Rule (United States, 1989). Skin
STEL: 325 mg/m^3 15 minute(s).
STEL: 250 ppm 15 minute(s).
TWA: 260 mg/m^3 10 hour(s).
TWA: 200 ppm 10 hour(s).

Low melt Agarose: not available.

Water: none listed

NaOH: ACGIH: 2mg/m^3 Ceiling.
NIOSH: 10 mg/m^3 IDLH.
OSHA Final PELS: 2 mg/m^3 TWA.

Section 9- Physical and Chemical Properties

Bottles 1-6:

Physical state: Gel at room temperature.
Appearance: Clear to cloudy, may be slightly colored.
Odor: None reported.
pH: Slightly alkaline to slightly acidic.
Vapor pressure: Not available.
Vapor Density: > 1.0
Evaporation rate: Not available.
Viscosity: Not available.
Boiling point: > 210°F or >99°C.
Melting point: Gel to liquid, > 37°C (>98.6°F)
Decomposition temperature: Not available.
Solubility: Soluble in water.
Specific gravity: Not available.
Molecular formula: Not applicable.
Molecular weight: Not applicable.

Bottles 7-8:

Physical state: Liquid at room temperature.
Appearance: Clear.
Odor: None reported.
pH: Alkaline.
Vapor pressure: 14mm Hg.
Vapor Density: > 1.0
Evaporation rate: Not available.
Viscosity: > 1 (ether = 1).
Boiling point: > 212°F or 100°C.
Freezing point: 0°C (32°F)
Decomposition temperature: Not available.
Solubility: Soluble in water.
Specific gravity: Not available.
Molecular formula: Not applicable.
Molecular weight: Not applicable.

Section 10 – Stability and Reactivity

Chemical stability: stable at room temperature in closed containers under normal storage ahd handling conditions.

Conditions to avoid: acids.

Incompatibilities with other materials: Bottles 7-8 only – metals, acids, aluminum, tin zinc.

Hazardous decompositon products: toxic fumes of sodium oxide.

Hazardous polymerization: will not occur.

Section 11- Toxicological Information

RTECS Number:

Phenylphthalein	SM8380000
Thymolphthalein	Not available
Methanol	PC1400000
Low melt Agarose	Not available
NaOH	WB4900000
Water	ZC0110000

Toxicity: Acute oral toxicity (LD_{50}): 5628 mg/kg [Rat] (Methanol)
Acute dermal toxicity (LD_{50}): 15800 mg/kg [Rabbit] (Methanol)
Acute toxicity of the vapor (LD_{50}): 64000 ppm 4 hour(s) [Rat] (Methanol)

Draize test, rabbit, eye: 400ug Mild (NaOH)
Draize test, rabbit, eye: 50ug /24H Severe (NaOH)
Draize test, rabbit, eye: 1mg/24H Severe (NaOH)
Draize test, rabbit, eye: 400ug Mild (NaOH)
Draize test, rabbit, skin: 500ug / 24H Severe (NaOH)

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified 2B (possible for human) by IARC [Phenylphthalein]. Classified 2 (Reasonably anticipated to be Human Carcinogens) by NTP [Phenylphthalein].

Acute Effects on Humans: Hazardous in case of eye contact (irritant). Inflammation of he eye is characterized by redness, watering and itching. Hazardous in case of skin contact (permeator). Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally blistering. May be hazardous in case of inhalation. Extremely hazardous in case of ingestion, may be harmful or fatal if swallowed.

Synergistic Products (Toxicologically) Not available.

Irritancy Not available.

Sensitization: Not available.

Carcinogenic Effects: Classified 2B (possible for human) by IARC [Phenylphthalein].
Classified 2 (Reasonably anticipated to be Human Carcinogens) by NTP [Phenylphthalein].

Toxicity to
Reproductive System: Not available.

Tertogenic Effects: Not available.

Mutagenic Effects: Not available.

Section 12- Ecological Information

No data available

Section 13- Disposal Considerations

EPA Wast Number: U154 D001

Treatment: Incineration, fuels blending or recycle. Contact your local permitted wasted disposal site

(TSD) for permissible treatment sites. ALWAYS CONTACT PERMITTED WASTE DISPOSER (tsd) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

Section 14- Transport Information

DOT Classification: **Not available**

TDG Classification: **Not available**

IMO/IMDG Classification: **Not available**

ICAO/IATA Classification: **Not available**

Section 15 - Regulatory Information

US Federal Regulations TSCA 8(b) inventory - CAS #'s 77-09-8, 67-56-1, 125-20-2, 7732-15-5, 1310-73-2.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Methanol.

SARA 311/312 MSDS Distribution – chemical inventory – hazard identification: methanol (very low percentage).

SARA 313 toxic chemical notification and release reporting: No products were found.

Clean Water Act (CWA) 307/311: CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

Clean Air Act (CAA) 112: This product does not contain any hazardous air pollutants. This product does not contain and Class 1 ozone depletors. This product does not contain any Class 2 ozone depleters.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

State Regulations: NaOH (CAS# 1310-73-2) can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California prop. 65: this product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Phenolphthalein.

California prop. 65: this product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Phenolphthalein.

WHMIS (Canada) CLASS D-2B: Material causing other toxic effects (toxic).

CEPA DSL: Phenolphthalein, Thymolphthalein, NaOH.
This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

International Regulations Not available.

Section 16- Other Information

MSDS Creation Date: 05/16/2006, Revision A.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.