SAFETY DATA SHEET

This safety data sheet complies with the requirements of:
SS586: 2008 (2014)

Revision date 03-May-2023 **Revision Number** 2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product Name Personal Genes in a Bottle Kit

Other means of identification

Catalogue Number(s) 1667010, 1667010EDU

UN proper shipping name FLAMMABLE LIQUID, N.O.S.

Description 1993, FLAMMABLE LIQUID, N.O.S. (Ethyl alcohol, Isopropyl alcohol), 3, II

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Laboratory chemicals

Uses advised against No information available

Details of the supplier of the safety data sheet

Corporate Headquarters
Bio-Rad Laboratories Inc.
1000 Alfred Nobel Drive
Hercules, CA 94547
USA
For further information, please contact

Manufacturer
Bio-Rad Laboratories, Life Science Group
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Legal Entity / Contact Address
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Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Singapore: 65-31581349

SECTION 2: Hazards identification

GHS Classification

Flammable liquids	Category 2

Label elements

Signal word
Danger

Hazard statements

H225 - Highly flammable liquid and vapour

Precautionary Statements - Prevention
Keep container tightly closed
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Precautionary Statements - Response
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification

SECTION 3: Composition/information on ingredients

Substance

Not applicable

Mixture

Chemical name	EC No (EU Index No)	CAS No	Weight-%
Ethyl alcohol	(603-002-00-5) 200-578-6	64-17-5	50 - 100
Isopropyl alcohol	(603-117-00-0) 200-661-7	67-63-0	2.5 - 5
Non-hazardous ingredients	Proprietary	Balance	

SECTION 4: First aid measures

Description of first aid measures

General advice No hazards which require special first aid measures.

Inhalation Remove to fresh air.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

For emergency responders

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

SECTION 5: Firefighting measures

Suitable Extinguishing Media

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Other information Ventilate the area.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid contact with skin and eyes. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical name	Singapore	ACGIH TLV
Ethyl alcohol 64-17-5	PEL: 1000 ppm PEL: 1880 mg/m³	STEL: 1000 ppm
Isopropyl alcohol 67-63-0	PEL: 400 ppm PEL: 983 mg/m³ STEL: 500 ppm STEL: 1230 mg/m³	STEL: 400 ppm TWA: 200 ppm

Biological occupational exposure limits

Chemical name	Singapore	ACGIH
Isopropyl alcohol 67-63-0	No data available	40 mg/L - urine (Acetone) - end of shift at end of workweek

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.
Hand protection	Wear suitable gloves. Impervious gloves.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	No information available.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	aqueous solution
Colour	light blue
Odour	Alcohol.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	8	
Melting point / freezing point	No data available	None known
Boiling point / boiling range	78 °C	
Flash point	13 °C	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	None known
Vapour density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information No information available

SECTION 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid Heat, flames and sparks.

Incompatible materials

Incompatible materials None known based on information supplied.

Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

Information on likely routes of exposure

Product Information

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Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 8,940.30 mg/kg
ATEmix (inhalation-dust/mist) 148.00 mg/l
ATEmix (inhalation-vapour) 152.60 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethyl alcohol	= 7060 mg/kg (Rat)		= 116.9 mg/L (Rat) 4 h = 133.8 mg/L (Rat) 4 h
Water	> 90 mL/kg (Rat)		
Isopropyl alcohol	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	> 10000 ppm (Rat) 6 h
Sodium lauryl sulfate	= 1288 mg/kg (Rat)	= 200 mg/kg (Rabbit)	> 3900 mg/m^3 (Rat) 1 h
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-	= 5900 mg/kg (Rat)	> 5000 mg/kg (Rat)	

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT - single exposure Based on available data, the classification criteria are not met.

STOT - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Classification not possible.

SECTION 12: Ecological information

Ecotoxicity

Ecotoxicity Toxic to aquatic life.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ethyl alcohol	-	LC50: 12.0 - 16.0mL/L (96h, Oncorhynchus mykiss) LC50: >100mg/L (96h, Pimephales promelas) LC50: 13400 - 15100mg/L (96h, Pimephales promelas)	LC50: 9268 - 14221mg/L (48h, Daphnia magna) EC50: =2mg/L (48h, Daphnia magna)
Isopropyl alcohol	EC50: >1000mg/L (96h, Desmodesmus subspicatus) EC50: >1000mg/L (72h, Desmodesmus subspicatus)	LC50: =9640mg/L (96h, Pimephales promelas) LC50: =11130mg/L (96h, Pimephales promelas) LC50: >1400000µg/L (96h, Lepomis macrochirus)	EC50: =13299mg/L (48h, Daphnia magna)

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
Ethyl alcohol	-0.35
Isopropyl alcohol	0.05

Mobility

Mobility in soil No information available.

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Ethyl alcohol	The substance is not PBT / vPvB
Isopropyl alcohol	The substance is not PBT / vPvB

Other adverse effects

Other adverse effects	No information available

SECTION 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products	Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

SECTION 14: Transport information

ADR

UN number or ID number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class(es)	3
Labels	3
Packing group	II
Classification code	F1
Tunnel restriction code	(D/E)
Special Provisions	274, 601, 640C
Description	1993, FLAMMABLE LIQUID, N.O.S. (Ethyl alcohol, Isopropyl alcohol), 3, II

IMDG

UN number or ID number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Description	UN1993, FLAMMABLE LIQUID, N.O.S. (Ethyl alcohol, Isopropyl alcohol), 3, II, (13°C C.C.)
Transport hazard class(es)	3
Packing group	II
Marine pollutant	NP
Special Provisions	274
EmS-No	F-E, S-E
Transport in bulk according to Annex II of MARPOL and the IBC Code	No information available

IATA

UN number or ID number	UN1993
UN proper shipping name	Flammable liquid, n.o.s.
Description	UN1993, Medicines, flammable, liquid, n.o.s. (Ethyl alcohol, Isopropyl alcohol), 3, II
Transport hazard class(es)	3
Packing group	II
Special Provisions	A3
ERG Code	3H

SECTION 15: Regulatory information

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

Singapore

Environmental Public Health Act

Dispose of waste product or used containers according to local regulations.

Fire Safety (Petroleum and Flammable Materials) Regulations
Verify that licence requirements are met.

Chemical name	Regulated	Hazard class
Ethyl alcohol	SCDETH1170L2	3
Isopropyl alcohol	SCDIPA1219L2	3

Hazardous Waste (Control of Export, Import and Transit) Act
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations
Regulated. See section 14 for more information.

Poison
None Listed
Workplace Safety and Health Act
See section 8 for national exposure control parameters. Comply with the health and safety at work laws.

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories
Contact supplier for inventory compliance status

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet
Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications

Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Label elements
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P363 - Wash contaminated clothing before reuse
P370 + P378 - In case of fire: Use dry chemical, CO2, water spray or alcohol-resistant foam to extinguish
P403 + P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Issuing Date	Bio-Rad Laboratories, Environmental Health and Safety
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Revision Note	Significant changes throughout SDS. Review all sections.

This safety data sheet complies with the requirements of: SS586: 2008 (2014)

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet