DNA-12000 KIT ASSY (P/N 292-36600-91, 292-36600-10, 292-36600-30) includes DNA-12000 Separation Buffer and DNA-12000 Marker solution.

Safety Data Sheet

Section 1: Identification of the substance or mixture and of the supplier

Product name:	DNA-12000 Separation Buffer
Name of supplier:	Shimadzu Corporation
Address:	1 Nishinokyo-Kuwabaracho, Nakagyo-ku, Kyoto 604-8511, Japan
Section in charge:	Clinical & Biotechnology Business Unit, Life Science Business Department
Telephone:	+81-75-823-1351
FAX:	+81-75-823-1364
Use of the product:	This product is for analytical research use only. Not applicable for clinical and/or diagnostic purposes.

Section 2: Hazard identification

GHS classification:
Reproductive toxicity Category 1B
Specific target organ toxicity (Single exposure) Category 2
(Central Nervous system, Digestive tract)

GHS label elements:

Signal word: DANGER

Hazard statements:
H360: May damage fertility or the unborn child.
H371: May cause damage to organs: Central nervous system, Digestive tract.

Prevention:
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/ protective clothing/ eye protection.

Response:
P308+P311: IF exposed or concerned: Call a POISON CENTER/ doctor.
P308+P311: IF exposed or concerned: Get medical advice/ attention.

Storage:
P405: Store locked up.

Disposal:
P501: Dispose of contents/ container according to all federal, state, and local environmental regulations.

Section 3: Composition/information on ingredients

Substance/ mixture: Mixture
General description: Buffer solution including boric acid and tris(hydroxymethyl)aminomethane.

Component	CAS No.	Concentration (weight %) *
water	7732-18-5	< 92
tris(hydroxymethyl)aminomethane	77-86-1	< 5.0
boric acid	10043-35-3	3.0
EDTA-disodium salt dihydrate	6381-92-6	< 0.5
hydroxyethyl cellulose	9004-62-0	< 0.3

* The exact concentration of composition has been withheld as confidential business information.

Section 4: First-aid measures

Inhalation:	Remove to uncontaminated area and supply flesh air. Promptly consult doctor, if needed.
Skin contact:	Take off contaminated clothing and wash skin with plenty of water.
Eye contact:	Flush eyes with plenty of water for at least 15 minutes and obtain medical attention.
Ingestion:	Drink plenty of water to induce vomiting and obtain medical attention.

Section 5: Fire-fighting measures

Suitable extinguishing media: Use water mist, foam, powder, carbon dioxide, dry sand.
Specific hazards arising from firefighting: Gases will form upon combustion of carbon monoxide, nitrogen oxides, and boric oxides.
Special fire-fighting measures: In case of fire in the surrounding area, promptly move the container to a safe place.

Section 6: Accidental release measures

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective equipment.
Environmental precautions: Absorb as much of the material as possible with paper towel or sand.
Methods and materials for containment and cleaning up: Prevent leakage and soak up completely with absorbent material.

Section 7: Handling and storage

Handling: Wear personal protective equipment to prevent inhalation and the product from conducting eyes or skin.
Storage: Keep tightly closed in dark cool and well-ventilated place.

Section 8: Exposure controls/personal protection

Exposure limits: No occupational exposure limit values and/or biological limit values are established.
Permitted concentration: Japan Society for Occupational Health: Not established
ACGIH: (Boric Acid) TWA 2mg/m^3(I), STEL 6mg/m^3(I)
Equipment measures: Eyewash equipment
Respiratory protection: Not required
Hand protection: Wear impervious glove.
Eye protection: Wear tightly sealed goggles.
Skin and body protection: Wear laboratory coat.

Section 9: Physical and chemical properties

Physical state, color:	Colorless, transparent liquid
Odor	Odorless
Melting/ Freezing point:	No data available
Boiling point/ boiling range:	No data available
Flammability:	Not applicable
Lower/Upper explosion limit:	Not classified as explosive.
Flash point:	No data available
Auto-ignition temperature:	The product does not combust spontaneously.
Decomposition temperature:	No data available
pH:	8.2 at 20ºC
Kinematic viscosity:	No data available
Solubility:	Readily soluble
Vapor pressure:	No data available
Density and/or relative density:	1.02g/mL (25°C)
Relative vapor density:	No data available
Particle characteristics:	Not applicable

Section 10: Stability and reactivity

Reactivity:	No information available
Chemical stability:	Stable under standard ambient conditions.
Possibility of hazardous reactions:	Hazardous reaction has not been reported.
Conditions to avoid:	Avoid physical stress e.g., direct sunlight, excess heat, or electrostatic discharge.
Incompatible materials:	No information available
Hazardous decomposition products:	No information available

Section 11: Toxicological information

No data available for the mixture.
Additional toxicological information on boric acid:

Acute toxicity:	Not classified (Oral LD50 value of 2,660-5,140mg/kg, Rat)
Skin corrosion/irritation:	Not classified (At 24 and 72 hours, moderate irritation was noted.)
Serious eye damage/eye irritation:	Not classified (Unknown toxic components in the mixture: ≥0.1%)
Reproductive or skin sensitization:	Not classified due to insufficient data.
Germ cell mutagenicity:	Not classified due to insufficient data.
Carcinogenicity:	Not classified due to insufficient data.
Reproductive toxicity:	Category 1B (Adverse effects on reproduction of parental animals and development of pups at doses producing no parental toxicity.

Specific target organ toxicity (single exposure): Category 2 (Central nervous systems, digestion tract)
Content in the mixture: ≧1.0%

Specific target organ toxicity (repeated exposure): Not classified due to insufficient data.

Aspiration hazard: Not classified (No kinematic viscosity data available.)

Section 12: Ecological information

No data available for the mixture.
Additional toxicological information on boric acid:

Toxicity	Hazardous to the aquatic environment (acute): Not applicable for classification. Hazardous to the aquatic environment (chronic): Not applicable for classification.
Persistence and degradability:	No information available
Bioaccumulative potential:	No information available
Mobility in soil:	No information available
Other adverse effects:	Ozone depletion potential, photochemical ozone creation potential and/or global Warming potential: Not classified (Not listed in Annexes of Montreal Protocol.)

Section 13: Disposal considerations

Residual waste:	Dispose of contents/ container according to all federal, state, and local environmental regulations.
Contaminated container:	After removing the contents, dispose of contents/ container according to all federal, state, and local environmental regulations.

Section 14: Transport information

US DOT, IMDG (sea), ADR/RID (land), ICAO/IATA (air): No classification assigned.
Prior to transport, make sure no leakage is observed from the bottle and stow a cargo without dropping and turning over.

Section 15: Regulatory information

U.S. TSCA Inventory: Boric acid
The composition/ information of ingredients is disclosed according to GHS. Comply with all countries, national and local regulation.

Section 16: Other information

References
1) National Institute of Technology and Evaluation: GHS; http://www.safe.nite.go.jp/ghs/ghs_index.html
2) National Institute of Technology and Evaluation: CHRIP; http://www.nite.go.jp/chem/chrip/chrip_search/systemTop
3) Ministry of Economy, Trade and Industry: GHS Mixture Classification System ver. 6.0 (According to GHS, sixth revised edition, 2015)
Information included in this document may be changed according to revision of laws and regulations or new discoveries, information, or test results. Although descriptions are based on reference materials, literature, and other information currently available, any values such as quantity and physical/chemical properties or evaluation described in this document are not guaranteed. Notes are provided assuming regular use. When using the material under special conditions, implement safety measures that are suitable for the intended purpose and use.

DNA-12000 KIT ASSY (P/N 292-36600-91, 292-36600-10, 292-36600-30) includes DNA-12000 Separation Buffer and DNA-12000 Marker solution.

Safety Data Sheet

Section 1: Identification of the substance or mixture and of the supplier

Product name:	DNA-12000 Marker solution
Name of supplier:	Shimadzu Corporation
Address:	1 Nishinokyo-Kuwabaracho, Nakagyo-ku, Kyoto 604-8511, Japan
Section in charge:	Clinical & Biotechnology Business Unit, Life Science Business Department
Telephone:	+81-75-823-1351
FAX:	+81-75-823-1364
Use of the product:	This product is for analytical research use only. Not applicable for clinical and/or diagnostic purposes.

Section 2: Hazard identification

GHS classification: Reproductive toxicity Category 1B

GHS label elements:

Signal word: DANGER

Hazard statements: H360: May damage fertility or the unborn child.

Prevention: P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P280: Wear protective gloves/ protective clothing/ eye protection.

Response: P308+P313: IF exposed or concerned: Get medical advice/ attention.

Storage: P405: Store locked up.

Disposal: P501: Dispose of contents/ container according to all federal, state and local environmental regulations.

Section 3: Composition/information on ingredients

Substance/ mixture: Mixture

General description: Buffer solution including boric acid.

Component	CAS No.	Concentration (weight %)
water	7732-18-5	< 98
tris(hydroxymethyl)aminomethane	77-86-1	< 1.0
deoxyribonucleic acid	-	< 1.0
boric acid	10043-35-3	< 1.0
5-carboxyfluorescein	76823-03-5	< 0.5
EDTA-disodium salt dihydrate	6381-92-6	< 0.1

Section 4: First-aid measures

Inhalation:	Remove to uncontaminated area and supply flesh air. Promptly consult doctor, if needed.
Skin contact:	Take off contaminated clothing and wash skin with plenty of water.
Eye contact:	Flush eyes with plenty of water for at least 15 minutes and obtain medical attention.
Ingestion:	Drink plenty of water to induce vomiting and obtain medical attention.

Section 5: Fire-fighting measures

Suitable extinguishing media: Use water mist, foam, powder, carbon dioxide, dry sand.

Specific hazards arising from fire-fighting:
Gases will form upon combustion of carbon monoxide, nitrogen oxides and boric oxides.

Special fire-fighting measures: In case of fire in the surrounding area, promptly move the container to a safe place.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear appropriate protective equipment.
Environmental precautions: Absorb as much of the material as possible with paper towel or sand.
Methods and materials for containment and cleaning up: Prevent leakage and soak up completely with absorbent material.

Section 7: Handling and storage

Handling:	Wear personal protective equipment to prevent inhalation and the product from conducting eyes or skin.
Storage:	Keep tightly closed in dark cool and well-ventilated place.

Section 8: Exposure controls/personal protection

Exposure limits:	No occupational exposure limit values and/or biological limit values are established.
Permitted concentration:	Japan Society for Occupational Health: Not established ACGIH: (Boric Acid) TWA 2mg/m^3(I), STEL 6mg/m^3(I)
Equipment measures:	Eyewash equipment
Respiratory protection:	Not required
Hand protection:	Wear impervious glove.
Eye protection:	Wear tightly sealed goggles.
Skin and body protection:	Wear laboratory coat.

Section 9: Physical and chemical properties

Physical state, color:	Colorless, transparent liquid
Odor	Odorless
Melting/ Freezing point:	No data available
Boiling point/ boiling range:	No data available
Flammability:	Not applicable
Lower/Upper explosion limit:	Not classified as explosive.
Flash point:	No data available
Auto-ignition temperature:	The product does not combust spontaneously.
Decomposition temperature:	No data available
pH:	8.2 at 20ºC
Kinematic viscosity:	No data available
Solubility:	Readily soluble
Vapor pressure:	No data available
Density and/or relative density:	No data available
Relative vapor density:	No data available
Particle characteristics:	Not applicable

Section 10: Stability and reactivity

Reactivity:	No information available
Chemical stability:	Stable under standard ambient conditions.
Possibility of hazardous reactions:	Hazardous reaction has not been reported.
Conditions to avoid:	Avoid physical stress e.g., direct sunlight, excess heat, or electrostatic discharge.
Incompatible materials:	No information available
Hazardous decomposition products:	No information available

Section 11: Toxicological information

No data available for the mixture.
Additional toxicological information on boric acid:

Acute toxicity:	Not classified (Oral LD50 value of 2,660-5,140mg/kg, Rat)
Skin corrosion/irritation:	Not classified (At 24 and 72 hours, moderate irritation was noted.)
Serious eye damage/eye irritation:	Not classified (Unknown toxic components in the mixture: ≥0.1%)
Reproductive or skin sensitization:	Not classified due to insufficient data.
Germ cell mutagenicity:	Not classified due to insufficient data.
Carcinogenicity:	Not classified due to insufficient data.

Reproductive toxicity: Category 1B (Adverse effects on reproduction of parental animals and development of pups at doses producing no parental toxicity.
Specific target organ toxicity (single exposure): Not classified due to insufficient data.
Specific target organ toxicity (repeated exposure): Not classified due to insufficient data.
Aspiration hazard: Not classified (No kinematic viscosity data available.)

Section 12: Ecological information

No data available for the mixture.
Additional toxicological information on boric acid:

Toxicity: Hazardous to the aquatic environment (acute): Not applicable for classification.
Hazardous to the aquatic environment (chronic): Not applicable for classification.
Persistence and degradability: No information available
Bioaccumulative potential: No information available
Mobility in soil: No information available
Other adverse effects: Ozone depletion potential, photochemical ozone creation potential and/or global Warming potential: Not classified (Not listed in Annexes of Montreal Protocol.)

Section 13: Disposal considerations

Residual waste: Dispose of contents/ container according to all federal, state, and local environmental regulations.
Contaminated container: After removing the contents, dispose of contents/ container according to all federal, state, and local environmental regulations.

Section 14: Transport information

US DOT, IMDG (sea), ADR/RID (land), ICAO/IATA (air): No classification assigned.
Prior to transport, make sure no leakage is observed from the bottle and stow a cargo without dropping and turning over.

Section 15: Regulatory information

U.S. TSCA Inventory: Boric acid
The composition/ information of ingredients is disclosed according to GHS. Comply with all countries, national and local regulation.

Section 16: Other information

References
1) National Institute of Technology and Evaluation: GHS; http://www.safe.nite.go.jp/ghs/ghs_index.html
2) National Institute of Technology and Evaluation: CHRIP; http://www.nite.go.jp/chem/chrip/chrip_search/systemTop
3) Ministry of Economy, Trade and Industry: GHS Mixture Classification System ver. 6.0 (According to GHS, sixth revised edition, 2015)

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