

MATERIAL SAFETY DATA SHEET

**VIVANTIS TECHNOLOGIES SDN BHD
REVONGEN CORPORATION CENTER**

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SECTION 1: CHEMICAL IDENTIFICATION

Catalogue Number: GF-GC-005; GF-GC-050; GF-GC-100; GF-GC-200

Product Name: GF-1 AmbiClean Kit (PCR & Gel) with 5 preps, 50 preps 100 preps and 200 preps

Description: DNA extraction kit for DNA recovery from both PCR products and agarose gel from both TAE and TBE buffer.

Intended Use:

For research use and laboratory use only.

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SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

All concentrations are below the acceptable limits specific to each chemical.

| Component(s) | Hazardous Ingredient(s) | CAS No. | Concentration |
|----------------|--|----------|---------------|
| DB Buffer | Guanidine Thiocyanate | 593-84-0 | ≥30% - <60% |
| Wash Buffer | No hazardous substance or mixture in the ingredients | - | - |
| Elution Buffer | No hazardous substance or mixture in the ingredients | - | - |

Acute Effects

The ingredients in this diagnostic kit are irritants to skin, eyes and respiratory system. They are harmful if it comes into contact with the skin and toxic if ingested.

Chronic Effects

Hazardous in case of ingestion.

SECTION 3: HAZARDS IDENTIFICATION

GHS Classification

The extraction kit consists of individual ingredients for different components of kit.

| Component(s) | Hazardous Ingredient(s) | CAS No. | Concentration |
|--|-------------------------|----------|---------------|
| DB Buffer | Guanidine Thiocyanate | 593-84-0 | ≥30% - <60% |
| Classification (Regulation (EC) No. 1272/2008) Acute Toxicity 4; H302 Acute Toxicity 4; H332 Hazardous to aquatic environment-chronic hazard 3; H412 | | | |
| Classification (67/548/EEC) No information available. | | | |

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| Component(s) | Hazardous Ingredient(s) |
|--|--|
| Wash Buffer | No hazardous substance or mixture in the ingredients |
| Classification (Regulation (EC) No. 1272/2008) Not a hazardous substance or mixture. | |
| Classification (67/548/EEC) Not a hazardous substance or mixture. | |

| Component(s) | Hazardous Ingredient(s) |
|--|--|
| Elution Buffer | No hazardous substance or mixture in the ingredients |
| Classification (Regulation (EC) No. 1272/2008) Not a hazardous substance or mixture. | |
| Classification (67/548/EEC) Not a hazardous substance or mixture. | |

Classification of the whole kit according to CLASS regulation 2013

Acute toxicity, Category 4, Oral; H302: Harmful if swallowed
 Acute toxicity, Category 2, Inhalation; H332: Harmful if inhaled
 Chronic aquatic toxicity, Category 3; H412: Harmful to aquatic life with long lasting effects

Label elements

Labeling according to regulation (EC) No. 1272/2008

Hazard pictograms



Signal word

Warning

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Hazard statements

H302 + H332 Harmful if swallowed or if inhaled
H412 Harmful to aquatic life with long lasting effects

Precautionary statements

Prevention:

P261 Avoid breathing dust / fume / gas / mist / vapors / spray
P264 Wash skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P273 Avoid release to the environment

Response:

P304 + P340 + P312 If inhaled, remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
P501 Dispose of contents/container to an approved waste disposal plant.

Other hazards

Not applicable

SECTION 4: FIRST-AID MEASURES

In case of contact with eyes, immediately flush with copious amounts of water for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do.

In case of contact with skin, immediately wash with soap and copious amounts of water for several minutes. Take off immediately all contaminated clothing.

In case of ingestion, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.

Notes to physician are that the first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

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SECTION 5: FIRE FIGHTING MEASURES

Extinguishing Media

Suitable: Carbon dioxide.
Unsuitable: High volume water jet

Do not allow run-off from firefighting to enter drains or water courses.

Wear self-contained breathing apparatus and protective clothing and equipment to prevent contact with skin and eyes for firefighting.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

For safety reasons in case of fire, cans should be stored in separately in closed containments.

Use a water spray to cool fully closed containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions

Wear the protective clothing, rubber gloves and mask. Wear self-contained breathing apparatus, rubber boots and goggles if necessary.

Environmental Precautions

Do not let product enter drains. Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform respective authorities.

Measures for Cleaning / Collecting

Soak up with inert absorbent material: sand, silica gel, acid binder, universal binder, sawdust.

Collect spilled liquid with liquid-binding material or inert absorbent and place in closed container for disposal.

Dispose of in accordance with federal, state and local environmental regulations.

Wash spill site after material pickup is complete.

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SECTION 7: HANDLING AND STORAGE

Handling

Good laboratory techniques should be used when handling. Do not eat, drink, smoke or apply cosmetics in laboratory areas. Do not pipette reagents or samples by mouth. Use reagents according to the product insert.

Work under hood or open-air space. Do not inhale substance / mixture. Avoid generation of vapors / aerosols.

Storage

Store all components as directed in the product insert. Keep tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Wear appropriate personal protective equipment when working with components or samples, including laboratory coats, disposable gloves and eye protection. Avoid hand and mouth contact. Wash hands as soon as possible after handling components or samples. Handle in accordance with good industrial hygiene and safety practice.

Exposure Controls

| | |
|-----------------------------------|--|
| Respiratory Protection | In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standards. |
| Hand Protection | Wear suitable protective gloves. Gloves material: compatible chemical-resistant gloves; nitrile rubber gloves. |
| Eye & Face Protection | Eye wash bottle with pure water. Tightly fitting safety goggles. |
| Skin & Body Protection | Wear suitable protective clothing and impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the workplace. |

Environmental Exposure Controls

Do not let product enter drains.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information for DB Buffer, Wash Buffer, Elution Buffer

| | |
|---|---|
| Appearance: | Liquid, Colorless |
| Odor: | No odor |
| pH: | DB Buffer: pH4.5-5 Wash Buffer: pH7-9 Elution Buffer: pH8-9 |
| Melting Point: | No information available |
| Boiling Point: | No information available |
| Flash Point: | No information available |
| Autoignition Temperature: | No information available |
| Decomposition Temperature: | No information available |
| Evaporation rate: | No information available |
| Flammability: | No information available |
| Upper Explosion Limit: | No information available |
| Lower Explosion Limit: | No information available |
| Vapor Pressure: | No information available |
| Relative Density: | No information available |
| Specific Gravity: | No information available |
| Water Solubility: | All buffers soluble |
| Partition coefficient: n-octanol/water: | No information available |
| Explosive Properties: | Not classified as explosive |
| Oxidizing Properties: | Not classified as oxidizing |
| Other information: | No information available |

SECTION 10: STABILITY AND REACTIVITY

The contents of the kit are stable under normal handling and storage conditions as stated in the product insert until the expiration date indicated on the corresponding label.

| | |
|-------------------------------------|--|
| Reactivity: | No dangerous reaction known under conditions of normal use |
| Possibility of hazardous reactions: | Contact with acids liberates very toxic gas. No decomposition if stored and applies as directed. Vapors may form explosive mixture with air. No decomposition if stored and applied as directed |
| Conditions to avoid: | Exposure to light and moisture. Heat, flames and sparks. |
| Incompatible materials: | Strong acids and oxidizing agents. Cyanides. |
| Polymerization: | No data available. |
| Hazardous decomposition products: | No data available. |

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SECTION 11: TOXICOLOGICAL INFORMATION

Information for Guanidine Thiocyanate (DB Buffer)

Acute Toxicity

Acute oral toxicity: LD50 Oral (Rat): 593 mg/kg
 Acute inhalation toxicity: Acute toxicity estimate: 1.5 mg/L; Test atmosphere: dust/mist
 Acute dermal toxicity: Acute toxicity estimate: 1100 mg/kg

Skin corrosion / irritation: No data available
 Serious eye damage / eye irritation: No data available
 Respiratory or skin sensitization: No data available
 Germ cell mutagenicity: No data available
 Carcinogenicity effects: No data available
 Reproductive toxicity: Not classified based on available information
 Aspiration toxicity: Not classified based on available information
 STOT – Single exposure: Not classified based on available information
 STOT – Repeated exposure: Not classified based on available information

Information for Wash Buffer and Elution Buffer

Acute Toxicity: Not classified based on available information
 Skin corrosion / irritation: Not classified based on available information
 Serious eye damage / eye irritation: Not classified based on available information
 Respiratory or skin sensitization: Not classified based on available information
 Germ cell mutagenicity: Not classified based on available information
 Carcinogenicity effects: Not classified based on available information
 Reproductive toxicity: Not classified based on available information
 Aspiration toxicity: Not classified based on available information
 STOT – Single exposure: Not classified based on available information
 STOT – Repeated exposure: Not classified based on available information

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SECTION 12: ECOLOGICAL INFORMATION

The extraction kit contains **Guanidine Thiocyanate (DB Buffer)** known to be hazardous to the environment or not degradable in wastewater treatment plants.

Self-assessment: Hazardous for water. Do not allow product or large quantities of it to reach ground water, water course or sewage system.

Toxicity

Guanidine Thiocyanate

Fish: LC50 (Poecilia reticula (guppy)): 89.1 mg/L; Exposure time: 96 hr

Daphnia and other aquatic invertebrates: EC50 (Daphia (water flea)): 42.4 mg/L; Exposure time: 48hr

Chronic aquatic toxicity:

Harmful to aquatic life with long lasting effects

Toxicity data on soil:

Not expected to absorb on soil

Other organisms relevant to the environment:

No data available

Persistence and Degradability

No data available for the extraction kit, including Guanidine Thiocyanate.

Bioaccumulative Potential

Guanidine Thiocyanate

Partition coefficient: n-octanol / water: log Pow: ca. -1.38

Mobility in Soil

No data available for the extraction kit, including Guanidine Thiocyanate.

Results of PBT and vPvB assessment

No applicable for the extraction kit, including Guanidine Thiocyanate.

Other adverse effects

No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

Do not contaminate ponds, waterways or drains with chemical or used container. Used components from this product should be disposed to a licensed waste management company.

Waste material must be disposed of in accordance with federal, state and local environmental regulations.

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SECTION 14: TRANSPORT INFORMATION

IATA-DGR / IMDG-Code

Not regulated as dangerous product in the meaning of transport regulations.

UN Number: Not regulated as dangerous product

UN proper shipping name: Not regulated as dangerous product

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not regulated as dangerous product

SECTION 15: REGULATORY INFORMATION

International Inventories

REACH: Not comply

CH INV: Complies

TSCA: Complies

DSL: Complies

AICS: Complies

NZIoC: Complies

ENC: Not comply

ISHL: Not comply

KECI: Complies

PICCS: Complies

IECES: Complies

SECTION 16: OTHER INFORMATION

The information contained in this MSDS relates only to the material(s) designed and does not relate to use(s) in combination with any other material, process(es) and /or chemical reaction(s). Vivantis Technologies Sdn. Bhd. provides this information in good faith, from sources believed to be accurate; however, Vivantis assumes no liability for its accuracy or completeness, and thus shall not be held liable for any damage resulting from handling or from contact with the above product.

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