MediRes Corp.

SAFETY DATA SHEET **Bi2M-UDNAXtract**

Universal DNA Purification and Gel Extraction Kit

SECTION 1: Identification

Product identifier: Universal DNA Purification and Gel Extraction Kit.

MediRes catalogue number: Bi2M-UDNAXtract. Pack size: 100 reactions.

Recommended use and restrictions: Laboratory purification of DNA from agarose gels and PCR products. For research use only; not for diagnostic, therapeutic, food or household use.

Supplier: MediRes Corp., 109 Elm Street, Sudbury, ON P3C 1T4, Canada. Telephone: +1 705-222-2847. Email: sales@medi-res.com.

Emergency telephone: +1 705-222-2847. For exposure or poisoning, contact a poison control centre or emergency medical service.

SECTION 2: Hazards identification

Prepared Buffer PW: Adding 60 mL of absolute ethanol to each 15 mL bottle gives a nominal 80% v/v contribution from the added ethanol. Handle the prepared wash as highly flammable and an eye irritant.

Hazard communication basis: The following signal word, pictograms and statements communicate the expected ethanol-related hazards after preparation.

Signal word for prepared PW: DANGER

Hazard pictograms for prepared PW

GHS02 Flame | GHS07 Exclamation mark

Code	Hazard statement for prepared PW
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.

Prevention: Keep prepared PW and added alcohols away from ignition sources. Keep containers closed. Avoid breathing mist or vapour; wear gloves, a laboratory coat and splash goggles. Use suitable ventilation and prevent static discharge during solvent transfer.

Response: For eye contact, rinse cautiously with water; remove contact lenses if easy, and continue rinsing. Obtain medical attention for persistent irritation. Remove alcohol-wet clothing promptly and rinse skin. Follow Section 4 for all buffer exposures.

Storage and disposal: Store prepared PW in a cool, ventilated area away from oxidizers. Collect reagent waste for approved chemical-waste disposal; do not discharge to drains.

Other hazards: The kit contains guanidinium thiocyanate, a hazardous chaotropic salt. Avoid ingestion, inhalation and eye or skin contact. Do not mix buffers or waste with bleach, strong acids or oxidizers; dangerous reaction products can form. Added isopropanol is flammable and may cause dizziness. Hot solutions and blades present burn and cut hazards.

Unknown acute toxicity: The percentage of ingredients with unknown acute toxicity cannot be determined from the available composition data.

SECTION 3: Composition and information on ingredients

Multi-component kit.

Chemical name	CAS No.	Reported content
Disodium EDTA dihydrate	6381-92-6	<25%
Tris base (tris(hydroxymethyl)aminomethane)	77-86-1	<25%
Guanidinium thiocyanate (guanidine isothiocyanate)	593-84-0	<25%
Potassium acetate	127-08-2	<25%
Sodium carbonate, anhydrous	497-19-8	<25%
Water	7732-18-5	Balance

Kit inventory and preparation

Component	Quantity supplied	Function / preparation
Buffer BL	50 mL	Column equilibration solution.
Buffer GL	60 mL	Yellow gel-solubilization and DNA-binding solution with a pH indicator.
Buffer PW	2 × 15 mL	Wash concentrate; add 60 mL of absolute ethanol to each bottle before use.
Elution Buffer	15 mL	DNA elution solution.
Bind DNA Mini Columns	100	Silica-based DNA-binding spin columns.
Collection tubes	100	Plastic collection tubes.

User-added ethanol: Ethanol, CAS 64-17-5: 60 mL of 100% ethanol per 15 mL PW concentrate. The nominal calculation is 60/(60 + 15) × 100 = 80% v/v added ethanol.

Other externally supplied reagents: Isopropanol (CAS 67-63-0) is added during DNA binding. Optional 3 M sodium acetate solution, pH 5.2, is used for protocol-directed pH adjustment.

SECTION 4: First aid measures

Inhalation: Move to fresh air and keep comfortable for breathing. Obtain medical attention for breathing difficulty, persistent irritation, dizziness or drowsiness. Trained responders should provide respiratory support when needed.

Eye contact: Immediately rinse with running water for at least 15 minutes, holding eyelids open. Remove contact lenses if easy and continue rinsing. Obtain urgent medical advice for pain, visual changes, persistent symptoms or suspected injury. Identify the buffer involved.

Skin contact: Remove contaminated clothing and shoes. Rinse skin thoroughly with water, then wash with soap and water. Obtain medical attention for burns, persistent irritation or extensive exposure. Wash clothing before reuse.

Ingestion: Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious person. Contact a poison control centre or physician promptly and identify the buffer involved.

Symptoms and effects: Eye or skin irritation may occur; more serious injury from guanidinium-containing reagent cannot be excluded. Alcohol vapour can cause headache, dizziness or drowsiness. Ingestion may cause gastrointestinal and systemic effects.

Immediate care and treatment: Treat according to symptoms and route of exposure. Product-specific antidote information is unavailable. Responders must avoid secondary exposure and ignition sources near alcohol-containing material.

SECTION 5: Fire fighting measures

Extinguishing media: Use alcohol-resistant foam, dry chemical, carbon dioxide or water spray suitable for the surrounding fire. Avoid a forceful water jet that spreads spilled solvent.

Specific hazards: Prepared PW and added alcohols can form ignitable vapour-air mixtures. Burning can generate carbon oxides and other hazardous fumes. Vapour can travel to an ignition source.

Firefighter protection: Use self-contained breathing apparatus and full protective clothing. Cool exposed containers from a safe position and contain contaminated firefighting water.

SECTION 6: Accidental release measures

Personal precautions: Isolate the spill, ventilate and eliminate ignition sources. Wear the protection in Section 8. Keep unprotected personnel away; obtain specialist assistance for large spills, unknown atmospheres or significant exposure.

Containment and cleanup: Prevent entry into drains and waterways. Absorb liquid with compatible inert material and collect in closed, labelled containers. Use non-sparking tools for alcohol-containing spills. Do not add bleach, acids or oxidizing disinfectants to buffer spills or collected waste.

Decontamination: After collecting the bulk spill, clean compatible surfaces with laboratory detergent and water. Manage sample-derived biological hazards separately under the laboratory's established procedures.

SECTION 7: Handling and storage

Safe handling: Avoid ingestion, inhalation and skin or eye contact. Do not eat or drink during use. Keep bottles capped and use a splash-resistant working arrangement. Follow the specified reagent order; do not improvise chemical mixtures.

Preparation and heating: Add ethanol to PW at room temperature and label the prepared bottle. Heat GL and Elution Buffer only as directed, using controlled laboratory heating without open flames. Allow hot gel solutions to cool before adding isopropanol. Do not heat prepared PW or alcohol-containing samples to redissolve precipitates.

Storage: Store the supplied kit at room temperature in a dark, dry location, with buffers tightly closed and columns sealed. The user guide specifies a 12-month storage period. Keep away from heat and incompatible chemicals. Store prepared PW with flammable liquids under laboratory requirements.

Incompatibilities: Keep guanidinium-containing reagents and all buffer waste separate from hypochlorite bleach, strong acids and oxidizers. Follow only the protocol-specified sodium acetate addition for gel-solution pH adjustment. Keep alcohols away from ignition sources.

SECTION 8: Exposure controls and personal protection

Control parameters: No product-specific occupational exposure limits or biological indices are available. Reference NIOSH limits for added solvents: ethanol TWA 1,000 ppm (1,900 mg/m³); isopropanol TWA 400 ppm (980 mg/m³), short-term 500 ppm (1,225 mg/m³). These are reference limits, not a statement of provincial legal limits.

Engineering controls: Use adequate laboratory ventilation. Use a chemical fume hood for open solvent preparation, substantial vapour or mist generation, and heated buffer handling where exposure is possible. Provide accessible eyewash and safety-shower facilities.

Eye and face protection: Chemical splash goggles; add a face shield for substantial splash risk. Use appropriate shielding when excising DNA bands under UV illumination.

Skin and hand protection: Wear a laboratory coat, closed footwear and chemical-resistant gloves. Select glove material and replacement intervals using manufacturer compatibility data for the solvents and buffer exposure; replace contaminated gloves promptly. Use suitable protection for hot vessels.

Respiratory protection: Routine small-volume use with effective ventilation should control exposure. If ventilation is insufficient, use respiratory protection selected under a workplace program for the actual contaminants. Unknown or emergency atmospheres require trained responders with supplied-air protection.

SECTION 9: Physical and chemical properties

Values below apply to the identified kit components.

Property	Information
Physical state	BL, GL, PW and Elution Buffer: liquids. Columns and tubes: solid articles.
Colour / appearance	Colourless liquids, except Buffer GL, which is yellow.
Odour	Characteristic reagent odour. Prepared PW: alcohol-like odour expected.
Odour threshold	No data available.
pH	No data available.
Melting / freezing point	No data available.
Boiling point / range	No data available.
Flammability	Prepared PW: treat as highly flammable.
Lower / upper explosive limits	No data available.
Flash point	No measured value for any kit buffer or prepared PW.
Autoignition temperature	No data available.
Decomposition temperature	No data available.
Kinematic viscosity	No data available.
Solubility	Ethanol and isopropanol are water-miscible. Complete buffer solubility data are unavailable.
Partition coefficient (n-octanol/water)	No data available.
Vapour pressure	No data available.
Density / relative density	No data available.
Relative vapour density	No data available.
Particle characteristics	Not applicable to the liquids; articles are not intended to generate respirable dust.

SECTION 10: Stability and reactivity

Reactivity and stability: Stable under recommended storage conditions. Alcohol-containing preparations present ignition hazards. Further product-specific reactivity data are unavailable.

Hazardous reactions: Guanidinium thiocyanate can react dangerously with bleach; contact with strong acids can release highly toxic gas. Carbonate can release carbon dioxide with acids. Alcohols react with strong oxidizers. Do not mix collected buffer waste with incompatible chemicals.

Conditions to avoid: Open flames, sparks, uncontrolled heating, evaporation, incompatible mixtures and damaged or leaking containers.

Hazardous decomposition products: Carbon oxides and other hazardous fumes may form during fire or decomposition. The supplier reports no product-specific decomposition data.

SECTION 11: Toxicological information

Likely exposure routes: Skin or eye contact, inhalation of mist or solvent vapour, and accidental ingestion.

Endpoint	Available information
Acute toxicity	No product LD50, LC50 or mixture acute toxicity estimate is reported. Guanidinium thiocyanate is harmful by ingestion, skin contact and inhalation as a reference substance; buffer-specific toxicity is undetermined.
Skin corrosion / irritation	No mixture test data. Guanidinium thiocyanate can cause burns as a reference substance. Buffer severity is concentration-dependent and undetermined. Repeated solvent contact can dry skin.
Serious eye damage / irritation	Prepared PW is expected to cause serious eye irritation. Guanidinium thiocyanate can cause serious eye damage as a reference substance. No buffer-specific eye test data are reported.
Respiratory / skin sensitization	No data available.
Germ cell mutagenicity	No data available.
Carcinogenicity	No kit-specific assessment available.
Reproductive toxicity	No kit-specific assessment available.
STOT single exposure	Alcohol vapour may cause headache, dizziness or drowsiness. No kit-specific category assigned.
STOT repeated exposure	No data available.
Aspiration hazard	No data for the supplied buffers or prepared PW.

Immediate and delayed effects: See Section 4. Absence of testing is not evidence that chronic effects or additional hazards are absent.

SECTION 12: Ecological information

Ecotoxicity: Harmful to aquatic life and must not enter sewers. Prevent environmental release.

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Other adverse effects: Effects of buffer additives and sample contaminants are not established.

SECTION 13: Disposal considerations

Disposal methods: Collect unused buffers, wash solutions, column flow-through, contaminated absorbents and containers for disposal by an approved laboratory chemical-waste service. Keep alcohol-containing waste closed and away from ignition sources. Do not discharge to drains, add bleach or acid, or autoclave solvent-containing chemical waste. Apply biological-waste controls where samples introduce an additional hazard.

SECTION 14: Transport information

Kit as supplied: Not dangerous goods under IATA, IMDG and US DOT. No UN number, proper shipping name, transport hazard class or packing group is assigned in the source.

Prepared PW and added solvents: Ethanol solutions commonly use UN 1170, ETHANOL SOLUTION, Class 3; pure isopropanol uses UN 1219, ISOPROPANOL, Class 3. These reference entries do not establish the classification or packing group of the kit or an unknown buffer mixture.

Special precautions: Transport at room temperature, protected from light and moisture, in closed, protected containers. The source does not state a Canadian TDG determination. Addition of alcohol changes the material; do not apply the supplied-kit declaration to prepared wash solutions or waste.

Transport in bulk under IMO instruments: Not applicable to the packaged laboratory kit.

SECTION 15: Regulatory information

Canadian hazard communication: This SDS uses the 16-section structure; buffer-specific classification remains undetermined from the available composition data. Canadian inventory status and HMIRA exemption details are not provided.

Other jurisdictions: For research use only; not for diagnostic procedures. Research-use designation alone does not establish exemption from chemical safety, inventory or transport requirements.

SECTION 16: Other information

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Prepared for: MediRes Corp. Email: sales@medi-res.com.

Ethanol hazard basis: Prepared PW warnings reflect the specified ethanol addition. Guanidinium precautions use ingredient safety information. Buffer-specific GHS classifications and measured mixture properties remain unavailable.

Abbreviations: GHS: Globally Harmonized System; WHMIS: Workplace Hazardous Materials Information System; STOT: specific target organ toxicity; TWA: time-weighted average; LD50/LC50: median lethal dose/concentration; HMIRA: Hazardous Materials Information Review Act.

Disclaimer: Information provides guidance for handling, storage, use, transport and disposal of this product. It is not a warranty or quality specification. Supplier data and reference chemical information do not imply batch-specific testing or apply automatically to other formulations or processes.

End of Safety Data Sheet