

Catalog No. ACC-106

Part # 12512

Set Contains:

- MB5 Extraction Buffer
- D4 Dilution Buffer
- 50 mL clear conical tubes (50) for extraction
- 1.5 mL micro-centrifuge tubes (50) for centrifugation

Materials Not Provided:

- Oster Blender
- 10 mL serological pipettes
- Pipette helper or bulb
- Precision pipette(s) capable of delivering 10-1000 µL
- Filtered pipette tips
- Scoopula(s)
- Dry heat block capable of 100±1.5°C, with insert suitable for 50 mL tubes
- Vortex
- Centrifuge
- Timer

Intended Use

This Set provides for extraction for the detection of DNA from ground corn when used with DNABLE Kit for Molecular Detection of MON87427 Event in Bulk Corn.

Intended User

DNABLE is designed to be simple and user friendly. It is designed for use by personnel with appropriate training in Molecular Assay techniques. Training specific to the DNABLE assay will be provided by EnviroLogix; contact Technical Service or visit envirologix.com for more information.

How the Kit Works

Ground corn is added to a 50 mL tube followed by MB5 buffer. The sample is heated to enable extraction of DNA. D4 is then added followed by a centrifugation step. The supernatant is then used in the DNABLE reaction.

Precautions and Notes

DNABLE is a highly sensitive assay. Therefore, the following precautions are recommended to reduce the chance of sample contamination:

- Separated work areas are recommended for each of the following:
 - DNABLE sample preparation
 - DNABLE amplification and detection



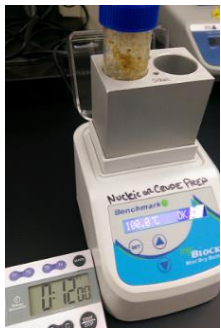

- Clean the work station and pipettes with 10% bleach before and after use
- Do not reuse kit disposables
- Wash scoopulas used for ground corn in 10% bleach and ensure the scoop is dry before reusing
- Change pipette tips in between samples, including replicates from the same sample extract
- Wear gloves and change between handling of samples
- Avoid delays between sample preparation steps and between sample preparation and DNA amplification
- MB5 and D4 are stable for 1 year post manufacture when stored refrigerated (2-8°C).

Sample Preparation and Extraction

1. Pre-heat the dry heat block to 100°C. Allow heat block to warm for 1 hour. Verify heat block is holding temperature with ±1.5°C using a simple thermometer.
2. Remove buffers from refrigerator and allow to come to room temperature while the heat block warms.
3. Follow below protocol for processing corn:
 - a. Weigh out 200 g of whole corn into small sized blending cup of Oster Blender (ensure that rubber gasket is in place and lid is closed tightly).
 - b. Grind on highest speed setting for 20 seconds then shake down cup.
 - c. Repeat 20 second grind twice more (for a total of 3 repetitions) shaking down between each 20 second grind.
 - d. Using a clean scoopula, carefully scoop ground corn into a clean 50 mL tube until it reaches the 5 mL line. Do not tap/pack down; this is an approximation.
 - e. Using a clean 50 mL conical tube to measure buffer volume (or a 10 mL serological pipette), add 10 mL of MB5 Extraction Buffer to ground corn, cap and vortex for 5 seconds.
Note: Set the vortexer at maximum speed and make sure that it vortexes vigorously.
 - f. Heat at 100°C, in the pre-heated 50 mL heat block, for 12 minutes.

(continued next page)

- g. Carefully remove from heat and using a clean 50 mL conical (or 10 mL serological pipette), add 10 mL of D4 Dilution Buffer.
- h. Vortex for 5 seconds AND then shake for 5 seconds.
Important: It is okay if the pellet does not dislodge entirely.
- i. Transfer approximately a 1mL aliquot of extract to a 1.5 mL micro-centrifuge tube.
- j. Centrifuge extract for 1 minute at 5000 x g.
- k. 25 μ L of supernatant from this centrifuged crude extract will be used in the subsequent DNAble reaction (DNAble Kit, Sample Preparation Step 3).

<p>1. Grind Corn:</p> <p>Use Oster Blender on high for 3 cycles of 20 seconds</p>					<p>9. Transfer up to 1 mL to a 1.5 mL tube</p> <p>10. Centrifuge 1 minute @ 5000 x g</p> <p>11. Use 25 μL extract in DNAble reaction</p>
<p>2. Add ground corn to 5 mL line</p>	<p>3. Add 10 mL MB5 Extraction Buffer</p> <p>4. Vortex 5 seconds on high setting</p>	<p>5. Heat for 12 minutes @ 100°C</p> <p>6. Remove from heat</p>	<p>7. Add 10 mL D4 Dilution Buffer</p> <p>8. Vortex 5 seconds AND Shake 5 seconds</p>		

LIMITED WARRANTY

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Material Safety Data Sheet
According to OSHA 29CFR 1910.1200

SECTION 1. Identification of the substance/mixture and of the company/undertaking	
1.1 Product identifier:	MB5 Dilution Buffer
1.2 Relevant identified uses of the substance or mixture and uses advised against application of the substance or the preparation:	Laboratory chemical; list component. Not to be used for purposes other than those specified in product literature.
1.3 Details of the supplier of the safety data sheet:	EnviroLogix Inc., 500 Riverside Industrial Pkwy., Portland ME 04113, USA. Phone: (207) 797-1300
1.4 Emergency telephone number:	(207) 797-1300 Technical Service

SECTION 2. Hazards identification	
2.1 Classification of the substance or mixture:	Eye Irritation Category 2 Aquatic Toxic, Chronic Category 2
2.2 Label elements:	<p>Labeling according to 29CFR 1910.1200:</p> <p>Pictogram: </p> <p>Signal word: Warning</p> <p>Hazard Statements: H319 Causes serious eye irritation H411 Toxic to aquatic life with long lasting effects</p> <p>Precautionary Statements: P264 Wash hands thoroughly after handling P280 Wear protective gloves/protective clothing/eye protection/face protection P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P337+P313 IF eye irritation persists: Get medical attention/advice</p>
2.3 Other Statements:	None

SECTION 3. Composition/information on ingredients				
3.2 Mixture:				
Chemical name	CAS No	EC No	Classification according to 29CFR 1910.1200	Amount (%)
Sodium Tetraborate Decahydrate	1303-96-4	215-540-4	H360 Rep 1B	1-3%
Ippol CA-360	9036-19-5		ACUTE Tox. 4, Eye Irrit. 2A, Aquatic Acute 2, Aquatic Chronic 2, H502, H519, H411	≤ 1%

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SECTION 4. First aid measures	
4.1 Description of first aid measures:	<p>After inhalation: In case of inhalation: Remove to fresh air. If not breathing give artificial respiration. Get medical attention immediately.</p> <p>After skin contact: In case of skin contact: Remove contaminated clothing and shoes immediately. Wash affected area with mild soap or detergent for at least 10 minutes or until no evidence of chemical remains.</p> <p>After eye contact: In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Lifting eyelids occasionally, until no evidence of chemical remains. Get medical attention immediately.</p> <p>After swallowing: In case of ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a physician immediately.</p>
4.2 Most important symptoms and effects, both acute and delayed:	None
4.3 Indication of any immediate medical attention and special treatment needed:	None

SECTION 5. Firefighting measures	
5.1 Extinguishing media:	CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture:	None
5.3 Advice for firefighters:	Wear protective gear appropriate for fire conditions including respiratory protective gear.

SECTION 6. Accidental release measures	
6.1 Personal precautions, protective equipment and emergency procedures:	In the case of spilled mixture wear gloves to prevent skin contact. In the case of a large spill, additional protection is recommended.
6.2 Environmental precautions:	Do not discharge mixture to sewer system or waterways.
6.3 Methods and material for containment and cleanup:	Absorb in paper towel and discard in appropriate waste. Clean with water afterwards. Large spills may be neutralized with dilute solutions of sodium carbonate or calcium oxide.
6.4 References to other sections:	For safe handling refer to Section 7. For information on PPE refer to Section 8. For disposal refer to Section 13.

SECTION 7. Handling and storage	
7.1 Precautions for safe handling:	Practice good chemical hygiene when handling. Avoid contact with eyes, skin, and clothing.
7.2 Conditions for safe storage, including any incompatibilities:	Store in tightly closed, non-metal container, in a corrosive compatible area. Prevent direct sunlight and heat. Store in well aired storage rooms.
7.3 Specific end use(s):	Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.

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SECTION 8. Exposure controls/personal protection

8.1 Exposure limits:	EH40/2005	OSHA
Components with limit values that require monitoring at the workplace:	8 Hr TWA - 5mg/m ³	8 Hr TWA - 10 mg/m ³
	Sodium Tetraborate Decahydrate	

8.2 Exposure Controls:	Facilities using this mixture should be equipped with an eyewash and safety shower. Use general or local exhaust ventilation to keep airborne concentrations below permissible exposure limits.
8.2.1 Engineering controls:	
8.2.2 General protective and hygiene measures:	The usual precautionary measures should be adhered to when handling chemicals.
Eye Protection:	Safety glasses with side shields, goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Eye and face protection regulators are described by OSHA (US) in 29CFR1910.133. Do not wear contact lenses when working with chemicals.
Hand Protection:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Breathing Equipment:	Appropriate respiratory protection should be determined according to local conditions using risk analysis protocols. An approved disposable air purifying particulate respirator may be used as a backup to engineering controls. Always use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.2.3 Environmental exposure controls:	Contain spills, do not allow into environment

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties:	Clear liquid, colorless to slight yellow.
a) Appearance:	None
b) Odor:	No Data Available
c) Odor Threshold:	8.6
d) pH:	No Data Available
e) Melting point/freezing point:	No Data Available
f) Boiling point/boiling range:	No Data Available
g) Flash point:	Not applicable
h) Evaporation rate:	No Data Available
i) Flammability (solid, gaseous):	No Data Available
j) Upper/lower flammability or explosive limits:	No Data Available
k) Vapor pressure:	No Data Available
l) Vapor density:	No Data Available
m) Relative density:	No Data Available
n) Solubility(ies):	Fully miscible, water.
o) Partition Coefficient: n-Octanol/water:	No Data Available
p) Auto-ignition temperature:	No Data Available
q) Decomposition temperature:	No Data Available
r) Viscosity:	No Data Available
s) Explosive properties:	No Data Available
t) Oxidizing properties:	No Data Available
9.2 Other information:	No further relevant information available.

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SECTION 10. Stability and reactivity

10.1 Reactivity:	No data available
10.2 Chemical Stability:	Stable under normal temperatures and pressures.
10.3 Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid:	No specific data
10.5 Incompatible materials:	No Data Available.
10.6 Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11. Toxicological information

Information on Toxicological Effects	
Ippol CA-630	
Acute toxicity:	Oral LD50 - Rat: 1800mg/kg Dermal LD50 - Rabbit: 8000 mg/kg
Sensitization:	No sensitizing effects known
CMR (carcinogenicity, mutagenicity and toxicity for reproduction) effects:	No CMR effects.
Additional toxicological information:	No Additional Information

SECTION 12. Ecological information

12.1 Toxicity:	Fish: LC50 Pimephales promelas (fathead minnow) - 8.9mg/l - 96.0 hr Daphnia: EC50 - Daphnia - 26 mg/l - 48 hr
12.2 Persistence and degradability:	No Data Available
12.3 Bio accumulative potential:	No Data Available
12.4 Mobility in soil:	No Data Available
12.5 Results of PBT and vPvB assessment:	Not available as a chemical safety assessment, not required/not conducted.
12.6 Other adverse effects:	No Data Available

SECTION 13. Disposal considerations

Waste treatment methods:	Contact a licensed professional waste disposal service to dispose of this material. Disposal of surplus or waste solutions must be in accordance with applicable local, state, and national laws and regulations.
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SECTION 14. Transport information

14.1 UN-Number (DOT, ADR, ADN, IMDG, IATA):	Not Hazardous for Transport
14.2 UN proper shipping name (DOT, ADR, ADN, IMDG, IATA):	Not Hazardous for Transport
14.3 Transport hazard class(es) (DOT, ADR, ADN, IMDG, IATA):	Not Hazardous for Transport
14.4 Packing group (DOT, ADR, IMDG, IATA):	Not Hazardous for Transport
14.5 Environmental hazards:	No environmental hazard.
14.6 Special precautions for user:	None
14.7 Transport in bulk, according to Annex II of MARPOL 73/78 and the IBC code:	No information available.

SECTION 15. Regulatory information**15.1 Safety, health, and environmental regulations**

US Federal Regulations	
OSHA	Not a hazardous material
SARA 313	Not listed

US State Regulations**European/International Regulations**

European labeling in accordance with EC Directives	Not hazardous according to European directives
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15.2 Chemical Safety Assessment

Not carried out

SECTION 16. Other information

This information is true based on our present knowledge. However, EnviroLogix makes no representation of its accuracy or completeness. Persons receiving this information must exercise their independent judgment in determining the product's safety and suitability for its intended use. This document shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

EHS Department
EnviroLogix Inc.

Codes:

H302 Harmful if swallowed
H319 Causes Serious Eye Irritation
H360 May damage fertility or the unborn child
H411 Toxic to Aquatic Life with Long Lasting Effects