



MagExtractor™ -Plant Genome-
 First issue: Apr 24, 2017
 Revised issue:
 SDS No. 1432F

Safety Data Sheet

1 Chemical product and company identification

Identification of the product	MagExtractor™ -Plant Genome-
Product Code	NPK-501
SUPPLIER	
Name	TOYOBO Co., Ltd.
Address	2-2-8 Dojima Hama Kita-ku Osaka, 530-8230 Japan
Department	Biotech support Department
Emergency Telephone No.	+81-6-6348-3786
Fax No.	+81-6-6348-3833
Recommended uses and restrictions on use	Isolation of genomic DNA from plant This product is sold for research purposes only . It is not intended for food, drug, household, agricultural or cosmetic use.

2 Hazards identification

Important hazards			
Adverse effects on human health	Cetyltrimethylammonium Bromide (CTAB) contained in Lysis Solution is harmful for human health. Guanidinium hydrochloride, which is contained in Binding Solution and Washing Solution, and lithium chloride contained in Magnetic beads may cause eye and skin irritation.		
Adverse effects on the environment	Cetyltrimethylammonium Bromide (CTAB) contained in Lysis Solution is very toxic to aquatic organisms.		
Chemical product-specific hazards	May develop poisonous gas in contact with oxidant.		
GHS classification			
Hazard class and category	<Magnetic beads>	<Lysis Solution>	<Washing Solution>
Physical Hazards	Classification not possible	Classification not possible	Classification not possible
Health Hazards			
Acute toxicity: Oral	Category 5	Not Classified	Category 4
Skin corrosion/Irritation	Category 2	Not Classified	Category 2
Serious eye damage/Eye irritation	Category 2A	Category 2A	Category 2A
Toxic to reproduction	Category 2	Category 2	Classification not possible
Specific target organ toxicity (single exposure)	Category 2 (nervous system)	Category 2 (heart, blood system)	Classification not possible
Specific target organ toxicity (repeated exposure)	Category 3 (Respiratory irritation) Category 1 (respiratory organs) Category 2 (nervous system, kidney)	Classification not possible	Classification not possible
Environmental Hazards			
Acute hazards to the aquatic environment	Classification not possible	Category 1	Classification not possible
Long-term hazards to the aquatic environment	Classification not possible	Category 1	Classification not possible



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2 Hazards identification(Continued)

Label elements

<Magnetic beads>

Pictograms or symbols



Signal word

Danger

Hazard statements

May be harmful if swallowed
 Causes skin irritation
 Causes serious eye irritation
 Suspected of damaging fertility or the unborn child
 May cause damage to nervous system
 May cause respiratory irritation
 Cause damage to respiratory organs through prolonged or repeated exposure
 May cause damage to nervous system and kidney through prolonged or repeated exposure

Precautionary statements

Prevention

Wash hands thoroughly after handling.
 Wear protective gloves/eye protection / face protection.
 Do not eat, drink or smoke when using this product.
 Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
 Do not breathe dust / fume / gas / mist / vapours /spray.
 Use only outdoors or in a well-ventilated area.

Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTER or doctor / physician if you feel unwell.
 If on skin: wash with plenty of water and soap.
 Take off contaminated clothing and wash it before reuse.
 If skin irritation occurs: Get medical advice/attention.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists: Get medical advice / attention.
 If exposed or concerned: Get medical advice / attention.

Storage

Get medical advice/attentions if you feel unwell.
 Store locked up.

Disposal

Store in a well-ventilated place. Keep container tightly closed.
 Dispose of contents / container in accordance with local / regional / national /international regulation.



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2 Hazards identification(Continued)

<Lysis Solution>

Pictograms or symbols



Warning

Signal word

Hazard statements

Causes serious eye irritation
 Suspected of damaging fertility or the unborn child
 May cause damage to heart and blood system
 Very toxic to aquatic life with long lasting effects

Precautionary statements

Prevention

Wash hands thoroughly after handling.
 Wear protective gloves/ protective clothing/ eye protection / face protection.
 Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe dust / fume / gas / mist / vapours /spray.
 Do not eat, drink or smoke when using this product.
 Avoid release to the environment.

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. continue rinsing.
 If eye irritation persists: Get medical advice/attention.
 If exposed or concerned: Get medical advice / attention.
 Collect spillage.

Storage

Store locked up.

Disposal

Dispose of contents / container in accordance with local / regional / national /international regulation.

<Binding solution>, <Washing Solution>

Pictograms or symbols



Warning

Signal word

Hazard statements

Harmful if swallowed
 Causes skin irritation
 Causes serious eye irritation

Precautionary statements

Prevention

Wash hands thoroughly after handling
 Do not eat, drink or smoke when using this product.
 Wear protective gloves/eye protection / face protection.

Response

If swallowed: Rinse mouth. Do NOT induce vomiting.
 If on skin: wash with plenty of water and soap.
 Take off contaminated clothing and wash it before reuse.
 If skin irritation occurs: Get medical advice / attention.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Disposal

Dispose of contents / container in accordance with local / regional / national /international regulation.



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3 Composition/information on ingredients

Chemical product (a substance or a mixture) Mixture
 <Lysis Solution>, <Binding Solution>, <Washing Solution>; aqueous solution
 <Magnetic Beads>; aqueous dispersion

Chemical Nature

Parts Name	Main components	CAS No. (EC No.)
<Magnetic Beads>	Magnetic Beads (Silicon dioxide, triiron tetraoxide)	-
	Lithium Chloride	7447-41-8
<Lysis Solution>	Cetyltrimethylammonium Bromide	57-09-0
	di-Sodium Dihydrogen Ethylenediaminetetraacetate Dihydrate	6381-92-6
<Washing Solution>, <Binding Solution>	Guanidine Hydrochloride	50-01-1

Components Contributing to the Hazard

Common Chemical Name (or Generic Name)	Silicon dioxide	Triiron tetraoxide	Lithium chloride
Synonyms	Colloidal silica	Iron(II) iron(III) oxide	
Contained Parts:Percentage	Magnetic Beads: 15~30%	Magnetic Beads: 5~15%	Magnetic Beads: approx. 30%
CAS No.	7631-86-9	1317-61-9	7447-41-8

Common Chemical Name (or Generic Name)

Synonyms

Contained Parts:Percentage

CAS No.

Cetyltrimethyl-ammonium bromide	Guanidine hydrochloride
Hexadecyltrimethyl-ammonium bromide, CTAB	Guanidinium hydrochloride
Lysis Solution approx. 3%	Binding Solution Washing Solution approx. 40%
57-09-0	50-01-1

4 First-aid measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of clean water, immediately. If skin irritation occurs: Get medical advice/attention.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice / attention.
Ingestion	Rinse mouth. Call a POISON CENTER or doctor/physician if you fell unwell. Do not induce to vomiting.
Most important symptoms/effects	Inhalation, Ingestion: Cough, Diarrhea Skin, Eye: Pain, Redness

5 Fire-fighting measures

Extinguishing media	Powder, Carbon Dioxide, Foam, Dry sand
Specific hazards	Toxic gas containing carbon monoxide, nitrogen oxides, chlorine/hydrogen chloride may be generated upon combustion of.
Precautions for fire-fighters	Fire-fighting should be done from the windward side of fire area. Fire-fighters should wear proper protective equipment in case of large scale fire.



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6 Accidental release measures

Personal precautions	Wear protective gear to avoid eye/skin contact and inhalation.
Environmental precautions	Avoid disposition to the environment.
Methods for cleaning up	Use cloth, paper or anything similar to soak up the solution leaking out of the container. Take up under vacuum using dust collecting filter.

7 Handling and storage

Handling	
Technical measures	Wear protective equipment and avoid contact with eyes and skin.
Precautions	Handle the reagent not to generate aerosol or dust. Use only in a well-ventilated area.
Hygiene measures	Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Storage	
Technical measures	Keep tightly closed and store at about 2-8°C. Store in a well-ventilated area.
Packaging Materials	Store in the original package

8 Exposure controls and personal protection

Engineering controls	Provide a ventilation equipment. Provide shower and eye washing apparatus nearby.
Personal protective equipment	
Respiratory protection	Wear a dust mask.
Hand protection	Chemical safety gloves.
Eye protection	Chemical safety goggles.
Skin and body protection	Wear lab coat when needed.

9 Physical and chemical properties

Physical State	Liquid
Colour	Brown suspension(Magnetic Beads), Clear solution(Others)
pH	7.0~8.0
Flash point	No flammability due to aqueous solution
Explosion limit	Not explosive
Density	Not available
Solubility	Soluble in water except for Magnetic Beads .

10 Stability and reactivity

Chemical stability and hazardous reactions	Stable under normal handling.
Conditions to Avoid	
Incompatible materials	Strong oxidizers
Hazardous decomposition products	carbon monoxide, nitrogen oxides, chlorine, hydrogen chloride



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11 Toxicological information

Toxicological information on the component of this product

	Silicon dioxide	triiron tetraoxide	Lithium Chloride
Acute toxicity			
Oral toxicity	Not available	Not classified	Rat : LD50 526-840 mg/kg
Dermal toxicity	Not available	Not classified	Not available
Inhalation toxicity	Not available	Not available	Not available
Skin corrosion/Irritation	Not available	Not classified	Category 2
Eye damage/irritation	Not available	Category 2	Category 2A
Carcinogenicity	IARC Group 3	Not available	not available
Toxic to reproduction	Not available	Not available	Category 2
Specific target organ toxicity-single exposure	Category 3 (respiratory irritation)	Not available	Category 2 (nervous system)
Specific target organ toxicity-repeated exposure	Category 1 (respiratory organs)	Not available	Category 2 (nervous system, kidney)

	Cetyltrimethyl-ammonium Bromide	Guanidine Hydrochloride
Acute toxicity		
Oral toxicity	Rat : LD50 410mg/kg	Rat: LD50 774mg/kg
Dermal toxicity	Not available	Rabbit : LD0 >2000mg/kg
Inhalation toxicity	Not available	Rat: LC50 5.319mg/L
Skin corrosion/Irritation	Category 2	Category 2
Eye damage/irritation	Category 2A	Category 2A
Carcinogenicity	not available	not available
Toxic to reproduction	Category 2	not available
Specific target organ toxicity-single exposure	Category 1 (heart, blood system)	not available
Specific target organ toxicity-repeated exposure	not available	not available

12 Ecological information

Toxicological information on the component of this product

	Lithium Chloride	Cetyltrimethyl-ammonium Bromide
Ecotoxicity	Fish (Ptychocheilus lucius) LC50(96hr): 17mg/L : Acute Category 3	Algae (Microcystis) EC50(96h):0.03 mg/L : Acute Category 1
Persistence and degradability	Not available	not degradable :BOD 0%
Bioaccumulative potential	Not available	BCF=741
Mobility in soil	Soluble in water and diffusible into water	Soluble in water and diffusible into water

13 Disposal considerations

Waste from residues	Dispose of in accordance with all applicable local and national laws and regulations.
Contaminated container and Contaminated packaging	Dispose of in accordance with all applicable local and national laws and regulations.



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14 Transport information

International Regulations

UN number

Specific Precautions

Not classified

Follow all of the laws and regulations in your respective country.

To prevent packages from breaking, handle with care.

15 REGULATORY INFORMATION

Follow all of the laws and regulations in your country.

16 OTHER INFORMATION

Notice

Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals. The information in this SDS, to the best of our knowledge, is accurate and correct. However, TOYOBO makes no warranty and assumes no liability whatsoever in connection with any use of this information. The information shall not be taken as being all inclusive and is to be used only a guide. All materials and mixtures may be present unknown hazards and should be used with caution. The SDS is subject to revision as new information becomes available.