

Product Name	CAS No.	KE No.	UN No.	EU No.
<i>MagListo</i> TM His-tagged Protein Purification Kit Binding/washing buffer				

1. Chemical and Manufacturer Information

A. Product Name	Binding/washing buffer
B. Recommended Usage and Limitations	
Recommended Usage	This product is designed for Protein extraction from various samples. Product is used for purification of 6X Histidine tagged protein.
Limitations of Usage	This product is designed for the purpose of purification protein. Product users must be certified for Purification protein handling or trained in molecular biological experimental methods.
C. Manufacturer/Supplier/Distributor Information	
Company Name	Bioneer Corporation
Address	Daedeok-gu Munpyeong-dong 49-3, Daejeon, South Korea
Emergency Contact Number	+82-42-930-8648

2. Risks-Hazards

A. Risk-Hazard Classification	Reproductive Toxicity : Category 2
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B. Caution Items Including Preventative Measures

Warning Symbols



Warning Phrase	Warning
Risk-Hazard Phrase	H361 Cause damage to the fetus or the reproductive capacity is suspect.
Preventative Measure Phrases	
Prevention	P201 Obtain special instructions before use P202 Do not handle until all safety precautions have been read understands. P281 Use personal protective equipment as required.
Response	P308+P313 IF exposed or concerned: Get medical advice/ attention.
Storage	P405 Store locked up.
Disposal	P501 Dispose of contents/container to ...

C. Other Risks-Hazards Not Included in Risk-Hazard Classification (NFPA)

Sodium Chloride	
Health	1
Fire	0
Reactivity	0
Tris (hydroxymethyl) aminomethane	
Health	2
Fire	1
Reactivity	0

3. Ingredient Information

Ingredient Name	Other Name	CAS No.	% of Total
Sodium Chloride	Sodium Chloride	7647-14-5	2.9
Tris (hydroxymethyl) aminomethane	2-Amino-2-hydroxymethyl-propane-1,3-diol	77-86-1	0.6

4. First-Aid Measures

A. Upon Eye Contact

Seek emergency medical attention.

Materials in contact immediately wash the skin and eyes with flowing water more than 20 minutes.

B. Upon Skin Contact

Seek emergency medical attention.

Remove contaminated clothing and shoes, and isolate the contaminated area. Please.

Materials in contact immediately wash the skin and eyes with flowing water more than 20 minutes.

C. Upon Inhalation

In case of minor exposure, prevent further spread of contamination.

Seek medical attention if exposure or contact is suspected.

Please move to fresh air.

If ingestion or inhalation is suspected, do not perform mouth-to-mouth resuscitation but use a medical breathing device.

Please warm and stable.

D. Upon Ingestion

Seek medical attention if exposure or contact is suspected.

If ingestion or inhalation is suspected, do not perform mouth-to-mouth resuscitation but use a medical breathing device.

E. Other Cautions

Contact medical service upon exposure and perform emergency measures such as source analysis.

Inform medical staff of substance and take all precautionary protection measures.

5. Explosion·Fire Measures

A. Proper(Improper) Extinguishing Material

Proper(Improper) Extinguishing Material

To extinguish fire related to this material, use alcohol foam, carbon dioxide or water spraying.

Use dry sand or earth for fire suppression

B. Specific Hazards from Chemicals

Specific Hazards from Chemicals

Container may explode upon heating.

Portions may burn but will not ignite easily.

Non-volatile. The chemical itself does not burn but heating may disintegrate and form corrosive/toxic fumes.

C. Firefighting Protection and Precautions

Sodium Chloride

Rescuers must wear appropriate protection.

Maintain a safe distance when extinguishing flames.

May be transported when melted.

Dig a trough to contain the spread of extinguished fluid.

Remove container if conditions are not hazardous.

For tank fires, extinguish at maximum distance or with unmanned extinguishing devices.

For tank fires, cool the container with excess water even after fire is extinguished.

During tank fires, if a high pitched sound emits from the pressure release valve or the tank becomes discolored, retreat immediately.

During tank fires, retreat from a tank consumed in flames.

During tank fires, if the fire is large-scale, use an unmanned extinguishing device or retreat and let the fire burn.

Tris (hydroxymethyl) aminomethane

Rescuers must wear appropriate protection.

Maintain a safe distance when extinguishing flames.

May be transported when melted.

Dig a trough to contain the spread of extinguished fluid.

Remove container if conditions are not hazardous.

For tank fires, extinguish at maximum distance or with unmanned extinguishing devices.

For tank fires, cool the container with excess water even after fire is extinguished.

During tank fires, if a high pitched sound emits from the pressure release valve or the tank becomes discolored, retreat immediately.

During tank fires, retreat from a tank consumed in flames.

During tank fires, if the fire is large-scale, use an unmanned extinguishing device or retreat and let the fire burn.

6. Accidental Release Measures

A. Measures and Protection for Personal

Immediately wipe spills and follow prevention measures.

Protection	Remove all potential ignition sources. Stop release if conditions are not hazardous. Do not handle release or broken container without proper protection. Use a plastic sheet to prevent spread. Be aware of conditions and chemicals to avoid.
B. Measures for Environmental Protection	Prevent introduction into waterways, sewers, basements and sealed spaces.
C. Claining and Removal Measures	Construct a bank to extinguish fire and collect water. Absorb spills with inert materials (e.g. dry sand or earth), and dispose of as chemical waste. Absorb liquids and clean contaminated area with detergent and water.
7. Handling and Storage	
A. Handling Precautions	Do not handle until all safety measures and precautions are read and understood. Residual material may exist after container is emptied. Follow all MSDS/label precautions. Handle/store with caution. Open lid carefully. Arising from heated material Do not breathe vapors. Do not enter storage areas lacking adequate ventilation. Be aware of conditions and chemicals to avoid.
B. Storage Precautions	Keep sealed and store. Completely drain empty drums and adequately seal. Immediately return drum to controller or place appropriately.
8. Exposure Prevention and Personal Protection	
A. Chemical Exposure Standards, Biological Exposure Standards Etc.	
Domestic Regulation	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information
ACGIH Regulation	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information
Biological Exposure Standards	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information
B. Proper Physical Management	Use process separation, local ventilation, minimizing air contamination below exposure thresholds etc. for physical management. Install face and emergency showers where this material is stored or used.
C. Personal Protection	
Respiratory Protection	
Sodium Chloride	Use KOSHA certified respiratory protection appropriate for the particular material and its physical and chemical properties.
Tris (hydroxymethyl) aminomethane	Use KOSHA certified respiratory protection appropriate for the particular material and its physical and chemical properties.
9. Physical and Chemical Properties	
A. Appearance	
Form	No Information
Color	No Information
B. Odor	No Information
C. Threshold Odor	No Information
D. pH	No Information
E. Freezing/Melting Point	No Information
F. Boiling Point and Range	No Information
G. Flash Point	No Information
H. Evaporation Speed	No Information
I. Flammability (Solid, Gas)	No Information
J. Ignition or Explosion Range (Upper/Lower)	No Information
K. Vapor Pressure	No Information
L. Solubility	No Information
M. Vapor Density	No Information

N. Specific Weight	No Information
O. n-Octanol/Water Solubility Coefficient	No Information
P. Self-Flammability	No Information
Q. decomposition Temperature	No Information
R. Viscosity	No Information
S. Molecular Weight	No Information
Sodium Chloride	
A. Appearance	
Form	Solid
Color	Colorless, white
B. Odor	None
C. Threshold Odor	No Information
D. pH	pH 6.7 (6.7-7.3)
E. Freezing/Melting Point	801 °C
F. Boiling Point and Range	1413 °C
G. Flash Point	No Information
H. Evaporation Speed	No Information
I. Flammability (Solid, Gas)	No Information
J. Ignition or Explosion Range (Upper/Lower)	- / -
K. Vapor Pressure	9.01575 mmHg (at 1026.85°C)
L. Solubility	360000 mg/l
M. Vapor Density	No Information
N. Specific Weight	2.16
O. n-Octanol/Water Solubility Coefficient	-0.46
P. Self-Flammability	No Information
Q. decomposition Temperature	No Information
R. Viscosity	No Information
S. Molecular Weight	58.44
Tris (hydroxymethyl) aminomethane	
A. Appearance	
Form	Solid
Color	White
B. Odor	Somewhat unique odor
C. Threshold Odor	No Information
D. pH	pH 10.4
E. Freezing/Melting Point	171 ~ 172°C
F. Boiling Point and Range	219 ~ 220°C (at 10mmHg)
G. Flash Point	170 °C
H. Evaporation Speed	No Information
I. Flammability (Solid, Gas)	No Information
J. Ignition or Explosion Range (Upper/Lower)	- / -
K. Vapor Pressure	0.000002 mmHg (at 25°C)
L. Solubility	550 mg/l
M. Vapor Density	No Information
N. Specific Weight	1.328
O. n-Octanol/Water Solubility Coefficient	-1.56 (estimated)
P. Self-Flammability	No Information
Q. decomposition Temperature	No Information
R. Viscosity	No Information
S. Molecular Weight	121.14
10. Stability and Reactivity	
A. Chemical Stability and Toxic Reaction Potential	
Sodium Chloride	Toxic gases may form by decomposition under high heat. Container may explode upon heating. Portions may burn but will not ignite easily. Non-volatile. The chemical itself does not burn but heating may disintegrate and form corrosive/toxic fumes.
Tris (hydroxymethyl) aminomethane	Container may explode upon heating. Portions may burn but will not ignite easily. Non-volatile. The chemical itself does not burn but heating may disintegrate and form corrosive/toxic fumes. During a fire can cause irritation, corrosive, toxic gas.
B. Conditions to Avoid	
Sodium Chloride	Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Tris (hydroxymethyl) aminomethane	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
C. Chemicals to Avoid	
Sodium Chloride	Flammable material, reducing material.
Tris (hydroxymethyl) aminomethane	Flammable material, reducing material.
D. Toxic Chemicals Formed with Decomposition	
Sodium Chloride	Irritating and highly toxic gases may form while burning through heat decomposition or combustion.
Tris (hydroxymethyl) aminomethane	Irritating and highly toxic gases may form while burning through heat decomposition or combustion.

11. Toxicology Information

A. Probable Exposure Paths

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

B. Health Hazard Information

Acute Toxicity

Oral

Sodium Chloride	LD50 3000 mg/kg Rat
Tris (hydroxymethyl) aminomethane	LD50 5900 mg/kg Rabbit

Skin

Sodium Chloride	LD50 > 10000 mg/kg Rabbit
Tris (hydroxymethyl) aminomethane	No Information

Inhalation

Sodium Chloride	Dust LC50 > 10.5 mg/l 4 hr Rat
Tris (hydroxymethyl) aminomethane	No Information

Skin Corrosion or Irritation

Sodium Chloride	Rabbit: Minimal irritant.
Tris (hydroxymethyl) aminomethane	Causes skin irritation.

Severe Eye Damage or Irritation

Sodium Chloride	Rabbit: Medium irritation.
Tris (hydroxymethyl) aminomethane	Causes eyes irritation.

Respiratory Hypersensitivity

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

Skin Hypersensitivity

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

Carcinogenic Properties

Industrial Safety Regulation

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

Department of Labor Notice

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

IARC

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

OSHA

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

ACGIH

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

NTP

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

EU CLP

Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information

Reproductive Cell Mutation Properties

Sodium Chloride	In vitro – Salmonella typhimurium/TA97, TA98, TA100, TA1535, TA1537, TA1538(Ames test): Negative, Nonhuman/Chromosome aberration test: Negative, CHO Cells/Chromosome aberration test: Positive
Tris (hydroxymethyl) aminomethane	No Information

Reproductive Toxicity	
Sodium Chloride	Female/placental administration (27 mg/kg for 15W of pregnancy): Miscarriage, fetal toxicity, musculoskeletal abnormality
Tris (hydroxymethyl) aminomethane	No Information
Target Organ Toxicity (Single Exposure)	
Sodium Chloride	Rat/Oral (1 mg/kg/24hr): Sodium–Potassium excretion effect. Irritating to pray inhalation.
Tris (hydroxymethyl) aminomethane	High blood pressure rats injected with salt displayed kidney and artery disability, nephron and glomerular damage. No effect on non-salt injected normal rats. Potassium intake prevents high blood pressure. Rat/Oral (16800 mg/kg/28D): TOXIC EFFECTS: Endocrinal – Adrenal gland weight difference
Target Organ Toxicity (Repeat Exposure)	
Sodium Chloride	Rat/Oral (16800 mg/kg/28D): TOXIC EFFECTS: Endocrine – Changes in adrenal weight
	No Information
Tris (hydroxymethyl) aminomethane	Target organ: Liver and kidney Rat NOAEL: about 60 mg/kg, 90일
Inhalation Toxicity	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information
12. Ecological Information	
A. Biological Toxicity	
Fish	
Sodium Chloride	LC50 1294.6 mg/l 96 hr Lepomis macrochirus
Tris (hydroxymethyl) aminomethane	LC50 955.892 mg/l 96 hr
Crustacean	
Sodium Chloride	EC50 402.6 mg/l 48 hr Daphnia magna
Tris (hydroxymethyl) aminomethane	EC50 19.793 mg/l 48 hr
Avian	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	EC50 163.053 mg/l 96 hr
B. Persistency and Degradability	
Persistency	
Sodium Chloride	log Kow -0.46
Tris (hydroxymethyl) aminomethane	log Kow -1.56 (estimated)
Degradability	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information
C. Bioconcentration	
Concentration	
Sodium Chloride	BCF 3.162
Tris (hydroxymethyl) aminomethane	BCF 3
Biodegradability	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information
D. Soil Mobility	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information
E. Other Toxic Effects	
Sodium Chloride	No Information
Tris (hydroxymethyl) aminomethane	No Information
13. Disposal Information	
A. Disposal Method	
Sodium Chloride	Observe all local and national environmental regulations if applicable.
Tris (hydroxymethyl) aminomethane	Observe all local and national environmental regulations if applicable.
B. Disposal Considerations	
Sodium Chloride	Observe all local and national environmental regulations if applicable.
Tris (hydroxymethyl) aminomethane	Observe all local and national environmental regulations if applicable.
14. Transport Information	
A. UN No.	
Sodium Chloride	No classification information.
Tris (hydroxymethyl) aminomethane	No classification information.

B. Proper Shipping Name		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
C. Shipping Hazard Classification		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
D. Container Classification		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
E. Marine Pollutant		
Sodium Chloride		No Information
Tris (hydroxymethyl) aminomethane		No Information
F. Special Safety Measures for Users Regarding Shipping or Shipping Measures		
Fire Emergency Measures		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
Release Emergency Measures		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
15. Regulatory Status		
A. Industrial Safety and Health Regulation		
Sodium Chloride		No Information
Tris (hydroxymethyl) aminomethane		No Information
B. Hazardous Chemical Management Regulation		
Sodium Chloride		No Information
Tris (hydroxymethyl) aminomethane		No Information
C. Dangerous Material Management Regulation		
Sodium Chloride		No Information
Tris (hydroxymethyl) aminomethane		No Information
D. Waste Management Regulation		
Sodium Chloride		No Information
Tris (hydroxymethyl) aminomethane		No Information
E. Other Domestic and International Regulations		
Domestic Regulation		
Residual Organic Contaminant Management Regulation		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
International Regulations		
OSHA Regulation		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
CERCLA Regulation		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
EPCRA 302 Regulation		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
EPCRA 304 Regulation		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
EPCRA 313 Regulation		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
Rotterdam Convention Substance		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
Stockholm Convention Substance		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable
Montreal Protocol Substance		
Sodium Chloride		Not Applicable
Tris (hydroxymethyl) aminomethane		Not Applicable

EU Classification (Confirmed Classification Result)	
Sodium Chloride	Not Applicable
Tris (hydroxymethyl) aminomethane	Not Applicable
EU Classification (Risk Phrases)	
Sodium Chloride	Not Applicable
Tris (hydroxymethyl) aminomethane	Not Applicable
EU Classification (Safety Phrases)	
Sodium Chloride	Not Applicable
Tris (hydroxymethyl) aminomethane	Not Applicable

16. Other References

A. Source of Information

Sodium Chloride

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (Form)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (Color)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (B. Odor)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (D. pH)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (E. Freezing/Melting Point)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (F. Boiling Point and Range)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (K. Vapor Pressure)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (L. Solubility)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (N. Specific Weight)

Quantitative Structure Activity Relation(QSAR) (O. n-Octanol/Water Solubility Coefficient)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (S. Molecular Weight)

International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>) (Oral)

Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>) (Skin)

Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>) (Inhalation)

International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>) (Skin Corrosion or Irritation)

International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>) (Severe Eye Damage or Irritation)

National Library of Medicine/genetic toxicology(NLM/GENETOX)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?GENETOX>) (Reproductive Cell Mutation Properties)

International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>) (Reproductive Cell Mutation Properties)

National Library of Medicine/Chemical Carcinogenesis Research Information System(NLM/CCRIS)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CCRIS>) (Reproductive Cell Mutation Properties)

Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>) (Reproductive Toxicity)

Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>) (Target Organ Toxicity (Single Exposure))

Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>) (Target Organ Toxicity (Repeat Exposure))

International Uniform Chemical Information Database(IUCLID)(<http://ecb.jrc.it/esis>) (Target Organ Toxicity (Repeat Exposure))

The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm) (Fish)

The ECOTOXicology database (ECOTOX)(http://cfpub.epa.gov/ECOTOX/quick_query.htm) (Crustacean)

Quantitative Structure Activity Relation(QSAR) (Persistence)

Quantitative Structure Activity Relation(QSAR) (Concentration)

Tris (hydroxymethyl) aminomethane

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (Form)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (Color)

The Chemical Database, The Department of Chemistry at the University of

Akron(<http://ull.chemistry.uakron.edu/erd>) (B. Odor)

The Merck Index 13th Ed.(D. pH)

National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>) (E. Freezing/Melting Point)

National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>) (F. Boiling Point and Range)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (G. Flash Point)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (K. Vapor Pressure)

National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>) (L. Solubility)

The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>) (N. Specific Weight)

HSDB(O. n-Octanol/Water Solubility Coefficient)

National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>) (S. Molecular Weight)

Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>) (Oral)

Ecological Structure Activity Relationships(ECOSAR) (Fish)

Ecological Structure Activity Relationships(ECOSAR) (Crustacean)

Ecological Structure Activity Relationships(ECOSAR) (Avian)

HSDB (Persistence)

HSDB (Concentration)

Akron University(<http://ull.chemistry.uakron.edu/erd/>)

B. Initial Issue Date 2011-06-30

C. Revision Count and Latest Revision Date

Revision Count 0

Latest Revision Date 0

D. Other

○ This Material Safety Data Sheet (MSDS) is based on, edited and partially modified from a MSDS obtained from the Korean Occupational Safety & Health Agency.