SECTION 1. IDENTIFICATION OF SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 PRODUCT IDENTIFIER:

Product or Trade Name: ImPAC®

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

Recommended Use(s)*: Deep foundations excavation fluid additive, drilling fluid additive, membrane enhancer, agglomeration aid

* *The "Recommended Use(s)" identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.*

Use Application(s): Professional Use Only

Recommended Restrictions: No restrictions on use known.

1.3 DETAILS OF THE SUPPLIER OF THE SUBSTANCE/MIXTURE AND SAFETY DATA SHEET:

Manufacturer/Supplier:

KB International LLC
735 Broad Street
Suite 209
Chattanooga, TN 37402
USA

Telephone Number: +1 (423) 266-6964

E-mail: info@kbtech.com

1.4 EMERGENCY CONTACT AND TELEPHONE NUMBER:

Emergency Contact: ChemTel, Inc.

Emergency Telephone Number: +1 (800) 255-3924

1.5 OTHER MEANS OF IDENTIFICATION:

Chemical Family: acrylic amide copolymer, cationic

SECTION 2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

Classification system:

- The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
- The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

Classification According to 2012 OSHA HCS; 29 CFR Part 1910.1200:

No need for classification according to GHS criteria for this product.

2.2 LABEL ELEMENTS:

According to Globally Harmonized System, (GHS):

The product does not require a hazard warning label in accordance with GHS criteria.

Hazards Not Otherwise Classified:

Very slippery when wet.

Labeling of Special Preparations (GHS):

This product is not combustible in the form in which it is shipped by the manufacturer, but may form a combustible dust through downstream activities (e.g. grinding, pulverizing) that reduce its particle size.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200:

Emergency Overview:

Caution - Slippery when wet!
Use with local exhaust ventilation.
Avoid dust formation.
May cause eye irritation.
Wear protective clothing.

According to Regulation (EC) No. 1272/2008 [CLP]:

The substance is not classified as hazardous according to the CLP regulation.

According to Directive 67/548/EEC or 1999/45/EC:

No need for classification according to criteria for this product.

Information Concerning Particular Hazards for Human and Environment:

Ecological Evaluation(s):

Based on the aquatic LC50s for components in this formulation for which we have aquatic toxicity data, this formulation would be characterized as having "low toxicity" to aquatic species.

Precautionary Statement(s):

General:

P103 …… Read label before use.

Prevention:

P250 …… Do not subject to grinding or friction.

P261 …… Avoid breathing dust.

P273 …… Avoid release to the environment.

P280 …… Wear protective gloves, clothing, and eye protection.

P285 …… In case of inadequate ventilation wear respiratory protection.

Response:

P301/330/331/314 … IF SWALLOWED: Rinse mouth with water. Do NOT induce vomiting. Get medical advice or attention if you feel unwell.

P305/335/352/332/313 IF ON SKIN (or hair): Brush off loose particles from skin. Wash with plenty of soap and water. If skin irritation or a rash occurs: Get medical advice.

P304/340/342/315 … IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Get immediate medical attention.

P305/351/338/337/313 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 or attention.

P306/362/364 …… IF ON CLOTHING: Take off contaminated clothing, and wash it before reuse.

P370/378 …….. IN CASE OF FIRE: Use dry powder or foam to extinguish.

P391 …….. Collect spillage.

Storage:

P402/4 ……..… Store in a dry place.

Disposal:

P501 ……. Dispose of contents or container in accordance with local, regional, national, and/or international regulations.

2.3 HAZARD DESCRIPTIONS:

WHMIS 2015 - Symbols:

Not hazardous under WHMIS.

NFPA Ratings *(Scale 0 – 4)*:

Health = 1
Fire = 1
Reactivity = 0

HMIS Ratings *(Scale 0 – 4)*:w

Health = 1
Flammability = 1
Physical Hazard = 0

2.4 HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS:

Results of PBT and vPvB Assessment:

PBT: Not applicable.

vPvB: Not applicable.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200:

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

Emergency Overview:

Caution:

- Causes eye irritation.
- May cause some irritation to the respiratory system if dust is inhaled.
- The statements are based on the properties of the individual components.
- Wear NIOSH-certified chemical goggles.
- Use NIOSH approved respirator as needed to mitigate exposure.
- Caution - Slippery when wet!
- Wear protective clothing.
- Refer to MSDS Section 7 for Dust Explosion information.
- This type of product has a tendency to create dust if roughly handled. It does not burn readily but as with many organic powders, flammable dust clouds may be formed in air.
- Organic powders may be capable of generating static discharges and creating explosive mixtures in air. Handle with caution.
- Avoid creating dusty conditions, dust build-up or formation of dust clouds.
- Avoid all sources of ignition: heat, sparks, open flame.

Note

- This document has been prepared in accordance with standards for workplace safety, which require the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warnings included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 COMPONENTS OF SUBSTANCE OR MIXTURE:

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

CAS #	EINECS #	INDEX #	DIRECTIVE 67/548/EEC CLASSIFICATION SYMBOL	DIRECTIVE 67/548/EEC CLASSIFICATION	Content(WW)	Chemical Name
Trade Secret	Trade Secret	Trade Secret	 XI R36	EYE IRRIT. 2, H319	≈ 25.0 %	amide coplymer, cationic
124-04-9	204-673-3	607-144-00-9	 XI R36	EYE IRRIT. 2, H319	≈ 0.25 – 1.25%	adipic acid

SECTION 4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

After Clothing Contact:

- Remove contaminated clothing.
- Wash all soiled clothing before reuse.

After Ingestion:

- Have victim rinse mouth and then drink plenty of water.
- Do not induce vomiting.
- Immediate medical attention required.

After Inhalation:

- Remove person to fresh air and keep comfortable for breathing.
- If respiratory symptoms persists seek medical attention.

After Skin Contact:

- Brush off loose particles from skin.
- Wash thoroughly with plenty of water.
- If skin irritation or a rash occurs get medical advice or attention.
- Wash thoroughly with plenty of water.

After Eye Contact:

- Wear appropriate protective equipment.
- If in contact with eyes, rinse cautiously with water for at least 15 minutes under running water with eyelids held open.
- Remove contact lenses, if present and easy to do and continue rinsing.
- If eye irritation persists get medical advise or attention.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Symptoms:

- The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.
- Slight irritant effect on skin and mucous membranes.
- Irritant to eyes.
- Gastric or intestinal disorders when ingested.
- Further important symptoms and effects are so far not known.

Hazards:

- No hazard is expected under intended use and appropriate handling.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

Note To Physician:

Treatment:

- Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media:

- Dry powder, foam.

Unsuitable Extinguishing Media:

- Water jet.
- Carbon Dioxide

Additional Information:

- If water is used, restrict pedestrian and vehicular traffic in areas where slip hazard may exist.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE / CONDITIONS OF FLAMMABILITY:

Hazards During Fire-fighting:

- Not considered flammable.
- Carbon oxides, nitrogen oxides.
- The substances/groups of substances mentioned can be released in case of fire.
- Very slippery when wet.

Flammability Classification (OSHA 29 CFR 1910.106):

- Not flammable.

Auto Ignition Temp:

- Non-combustible.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:

Protective Equipment for Firefighters:

- Wear a self-contained breathing apparatus.

Special Fire-Fighting Procedures:

- The degree of risk is governed by the burning substance and the fire conditions.
- Wear a self-contained breathing apparatus.

Further Information:

- Dusty conditions may ignite explosively in the presence of an ignition source causing flash fire.

5.4 IMPACT SENSITIVITY:

Assessment:

- Not shock-sensitive.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

- Use personal protective clothing.
- Use respiratory protective device against the effects of fumes/aerosol.
- Restrict access to area until completion of clean-up.
- All persons dealing with clean-up should wear the appropriate protective clothing and equipment.
- Ensure adequate ventilation.
- Avoid formation of dust.
- Product forms slippery surface when combined with water.
- Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

6.2 ENVIRONMENTAL PRECAUTIONS:

- Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.
- Do not discharge into drains, water courses or onto the ground.
- If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

For Small Amounts:

Dry Form:

For Small Amounts:

- Pick up with suitable appliance and dispose of.
- Avoid raising dust.
- Dispose contaminated material as waste according to item 13.

For Large Amounts:

- Contain with dust binding material and dispose of.
- Avoid raising dust.
- Send for recovery or disposal in suitable receptacles.
- Dispose contaminated material as waste according to item 13.

Wet Form:

- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Pick up mechanically.
- Send for recovery or disposal in suitable receptacles.
- Dispose contaminated material as waste according to item 13.

Further Accidental Release Measures:

- Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
- Avoid the formation and build-up of dust — danger of dust explosion.
- Dust in sufficient concentration can result in an explosive mixture in air.
- Non-sparking tools should be used.
- Handle to minimize dusting and eliminate open flame and other sources of ignition. Forms slippery surfaces with water.

6.4 REFERENCE TO OTHER SECTIONS:

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

- Prevent formation of dust.

- Any deposit of dust which cannot be avoided must be regularly removed.
- Use only in well ventilated areas.
- Use respiratory protective device against the effects of dust.
- Breathing must be protected when large quantities are decanted without local exhaust ventilation.
- Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.
- Forms slippery surfaces with water.
- Handle in accordance with good industrial hygiene and safety practice.
- Obey all label warnings, especially during container cleaning.
- Do not remove label until container is thoroughly cleaned.
- Do not use container for food, feed or drinking water.

Protection Against Fire and Explosion:

- Avoid dust formation.
- Dust in sufficient concentration can result in an explosive mixture in air.
- Handle to minimize dusting and eliminate open flame and other sources of ignition.
- Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
- Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.
- Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
- Protect from heat.
- Keep respiratory protective device available.

✳ *Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids (2013 Edition) for safe handling.*

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Storage:

Requirements to Be Met by Storerooms and Receptacles:

- Store in unopened original containers in a cool and dry place.
- Avoid extreme heat.
- Avoid storage near extreme heat, ignition sources or open flame.
- Protect from humidity and water.

Information About Storage in One Common Storage Facility:

- Store away from foodstuffs.
- Do not store together with oxidizing and acidic materials.
- Do not store together with alkalis (caustic solutions).

Further Information on Storage Conditions:

- Store in unopened original containers in a cool and dry place.
- This product is hydroscopic.
- Avoid wet, damp or humid conditions, temperature extremes and ignition sources.

Unsuitable Materials for Containers:

- Aluminum

Storage Stability:

- Avoid extreme heat.

Protect from Temperatures Above:

- 70 °C (158 °F)

7.3 SPECIFIC END USE(S):

- Apart from the uses mentioned in section 1.2, no further relevant information available.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ADDITIONAL INFORMATION ABOUT DESIGN OF TECHNICAL SYSTEMS:

Appropriate Engineering Controls:

Advice on System Design:

- No further data; see section 7.

8.1 CONTROL PARAMETERS:

Components with Limit Values that Require Monitoring at the Workplace:

- Not required.

DNELs:

- No further relevant information available.

PNECs:

- No further relevant information available.

Components with Occupational Exposure Limits:

- Adipic acid …….. ACGIH TWA value 5 mg/m^3

Additional Information:

- The lists that were valid during the creation were used as basis.

8.2 EXPOSURE CONTROLS:

Personal Protective Equipment:

General Protective and Hygienic Measures:

- The usual precautionary measures for handling chemicals should be followed.
- Keep away from foodstuffs, beverages and feed.
- Do not inhale dust.
- Avoid contact with the eyes.
- Avoid long term contact with the skin.
- Ensure that washing facilities are available at the work place.

Respiratory Protection:

- Respiratory protection may not be required under normal operating conditions if adequate ventilation is provided.
- When applicable suitable respiratory protection for lower concentrations or short-term effect: Particle filter with medium efficiency for solid and liquid particles (e.g., EN 143, Type P2).
- For spills, respiratory protection may be advisable.

Body Protection:

- Light protective work clothing.

Hand Protection:

- *Chemical resistant protective gloves (EN 374).*

* *Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinyl chloride (0.7 mm) and other Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types.*

Eye / Face Protection:

- Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Other Protective Equipment:

- An eyewash station and safety shower should be made available in the immediate working area.
- Other equipment may be required depending on workplace standards.

8.3 GENERAL SAFETY AND HYGIENE CONSIDERATIONS:

- Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation.
- Wearing of closed work clothing is recommended. No eating, drinking, smoking or tobacco use at the place of work.

Limitation and Supervision of Exposure into the Environment:

- No special environmental precautions required.

Risk Management Measures:

- See Section 7 for additional information.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	
Physical State:	Dry/Solid.
Form:	Granular to Powder.
Color:	Clear, opaque to off-white.
Odor:	Oderless.
Odor Threshold (ppm)**:**	Not determined.
Molecular Formula:	Trade Secret
Molecular Weight:	Trade Secret
Specific Gravity (water = 1)**:**	Not Applicable
Bulk Density (at 20 °C or 68 °F)**:**	Approx. 0.60 - 0.75 g/cm^3 – (600 - 750 kg/m^3) or 0.0217 - 0.02710 lb/in^3 – (5.01 - 6.26 lb/gal)
pH (Value)**:**	3.5 - 4.5 (in 10 g/l solution at 20 °C or 68 °F)
Change In Condition:	
Freeze Point:	Not determined.
Melting Point:	Not determined.
Melting Range:	Not determined.
Boiling Point:	Not determined.
Boiling Range:	Not determined.
Evaporation Rate:	The product is a non-volatile solid.
Flash Point (°C) [Closed cup]**:**	Not Applicable
Flammability (solid, gaseous)**:**	Not highly flammable.
Danger of Explosion:	Product does not present an explosion hazard in its supplied form.
Explosive Properties:	
Lower Explosion Limit:	For solids not relevant for classification and labelling.
Upper Explosion Limit:	For solids not relevant for classification and labelling.
Auto-ignition Temperature (°C)**:**	Not self-igniting
Minimum Ignition Energy (°C)**:**	>999 mJ
Burning Number:	5
Dust Explosion Class:	St 1
Oxidizing Properties:	The substance or mixture is not classified as oxidizing.
Vapor Pressure (mm Hg)**:**	The product has not been tested.
Vapor Density (Air=1)**:**	No data available.
Relative Density (g/ml @ 20 °C)**:**	No data available.
Solubility / Miscibility (Water)**:**	Soluble (Forms a viscous solution.)
Solubility (Quantitative)**:**	No data available.
Solubility (Qualitative)**:**	No data available.
Partition Coefficient (n-octanol/water)**:**	Study scientifically not justified.
Auto-ignition Point (°C)**:**	Not self-igniting
Decomposition Temperature (°C)**:**	No decomposition if stored and handled as prescribed/indicated.
Viscosity (mPa.s)**:**	
Dynamic:	Not Applicable
Kinematic:	Not Applicable
Volatiles (% by weight)**:**	The product is a non-volatile solid.
Volatile Organic Compounds (VOC's)**:**	Not Applicable
Absolute Pressure of Container:	Not Applicable
Flame Projection Length:	Not Applicable
Other Physical/Chemical Comments:	If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10. STABILITY AND REACTIVITY

10.1 REACTIVITY:

- Stable under normal conditions of use and storage.
- No hazardous reactions if stored and handled as prescribed/indicated.

10.2 CHEMICAL STABILITY:

Decomposition Products:

- No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal Decomposition:

- No decomposition if used and stored according to specifications.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS:

- The product is not a dust explosion risk as supplied; however the build-up of fine dust can lead to a risk of dust explosions.
- Reacts with strong oxidizing agents.
- Reacts with strong acids.

10.4 CONDITIONS TO AVOID:

- Avoid extreme heat.
- Avoid humidity.
- Avoid water.
- Avoid electro-static discharge.
- Avoid dust formation.
- Store away from acids and oxidizing agents.

10.5 INCOMPATIBLE MATERIALS:

- Strong acids, strong bases, strong oxidizing agents.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:

- Carbon monoxide and carbon dioxide
- Nitrogen oxides (NOx)
- Ammonia

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Acute Toxicity/Effects:

Assessment of Acute Toxicity:

- Virtually nontoxic after a single ingestion.

Oral:

Type of value: LD50
Species: rat
Value: > 5,000 mg/kg
Method: OECD Guidline 401

Irritation / Corrosion:

Assessment of irritating effects:

- Based on the ingredients, there is no suspicion of a skin-sensitizing.

Skin:

Species: rabbit
Result: non-irritating
Method: OECD Guidline 401

Eye:

Species: rabbit
Result: non-irritating
Method: OECD Guidline 401

Sensitization:

Assessment of Acute Toxicity:

- Based on the ingredients, there is no suspicion of a skin-sensitizing potential.

Aspiration Hazard:

- No aspiration hazard expected.

Chronic Toxicity/Effects:

Repeated Dose Toxicity:

Assessment of Repeated Dose Toxicity:

- Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statement has been derived from the properties of the individual components.

Genetic Toxicity:

Assessment of Mutagenicity:

- Based on the ingredients, there is no suspicion of a mutagenic effect.

Carcinogenicity:

Assessment of Carcinogenicity:

- The whole of the information assessable provides no indication of a carcinogenic effect.

Carcinogenic Categories:

IARC (International Agency for Research on Cancer)	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen.
OSHA - CA (Occupational Safety & Health Administration)	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.
NTP (National Toxicology Program)	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen.
ACGIH (The American Conference of Governmental Industrial Hygienists)	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.

Reproductive Toxicity:

Assessment of Reproduction Toxicity:

- Based on the ingredients, there is no suspicion of a toxic effect on reproduction.

Other Information:

- The product has not been tested. The statements on toxicology have been derived from products of a similar structure and composition.

Symptoms of Exposure:

- No significant symptoms are expected due to the non-classification of the product.

Additional Toxicological Information:

- When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

SECTION 12. ECOLOGICAL INFORMATION

12.1 TOXICITY:

Aquatic Toxicity:

Assessment of Aquatic Toxicity:

- Acute effects on aquatic organisms are due to the cationic charge of the polymer, which is quickly neutralized in natural water courses by irreversible adsorption onto particles, hydrolysis and dissolved organic carbon. Fish toxicity and aquatic toxicity are drastically reduced by rapid irreversible adsorption onto suspended and/or dissolved organic matter. The hydrolysis products are not acutely harmful to aquatic organisms. Tested was a substance with a high cationic charge density. As the acute effects are associated with the charge density, substances with a lower charge density are expected to have a lower toxicity.

Toxicity to Fish:

Type Test: LC50 (96 h)
Method: Static
Species: Fish
Result: 1 - 10 mg/l

Aquatic Invertebrates:

Type Test: EC50 (48 h)
Species: Daphnia
Result: 10 - 100 mg/l

12.2 PERSISTENCE AND DEGRADABILITY:

Assessment Biodegradation and Elimination (H_2O)

- Not readily biodegradable (by OECD criteria).

Information on Stability in Water (Hydrolysis)

Type Test: > 70 % (28 d) (pH value > 6)

Additional Information: In contact with water the substance will hydrolyze rapidly.

12.3 BIOACCUMULATIVE POTENTIAL:

- Based on its structural properties, the polymer is not biologically available.
- Accumulation in organisms is not to be expected.

12.4 MOBILITY IN SOIL:

Assessment Bioaccumulation Potential:

- Not readily biodegradable (by OECD criteria).

Information On:

- Cationic polymer.

Adsorption to Solid Phase:

- Expected.

Additional Ecological Information:

Other Ecotoxicological Advice:

- Must not be discharged into the environment.
- The product has not been tested.
- The statement has been derived from substances/products of a similar structure or composition.

12.5 RESULTS OF PBT AND VPVB ASSESSMENT:

PBT: Not applicable

VPVB: Not applicable

12.6 OTHER ADVERSE ECOLOGICAL EFFECTS:

- No further relevant information available.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS:

Unused Material and Residue:

Recommendations:

- Dispose of in accordance with national, state and local regulations.

Container Disposal:

Recommendations:

- Container disposal:
- Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

- Not a hazardous waste under RCRA (40 CFR 261).

SECTION 14. TRANSPORTATION INFORMATION

14.1 UN Number: (DOT, ADR, ADN, IMDG, IATA)	Not classified as a dangerous good under transport regulations.
14.2 UN Proper Shipping Name: (DOT, ADR, ADN, IMDG, IATA)	Not classified as a dangerous good under transport regulations.
14.3 Transpot Hazard Class(es): (DOT, ADR, ADN, IMDG, IATA)	Not classified as a dangerous good under transport regulations.
14.4 Packing Group: (DOT, ADR, IMDG, IATA)	Not classified as a dangerous good under transport regulations.

14.5 Environmental Hazard(s): Marine Pollutant:	Not classified as a dangerous good under transport regulations.
14.6 Special Precautions for User:	No
14.7 Transport in Bulk According to Annex II of MARPOL73/78 & the IBC Code: UN "Model Regulation":	Not classified as a dangerous good under transport regulations.

Special Precautions for User:

- None reported by the manufacturer.

Environmental Hazards:

- See ECOLOGICAL INFORMATION, Section 12.

SECTION 15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE UNITED STATES (USA) COMPONENTS LISTED BELOW ARE PRESENT ON THE FOLLOWING U.S. FEDERAL CHEMICAL LISTS:

SARA:

Section 302 (Extremely Hazardous Substances Listings):	None of the chemical substances in this product are subject to reporting.
Section 311/312 (Hazardous Chemical Inventory):	No SARA Hazards
Section 355 (Extremely Hazardous Substances Listing):	None of the chemical substances in this product are listed.
Section 313 (Specific Toxic Chemical Listings):	None of the chemical substances in this product are listed.
TSCA (Toxic Substances Control Act):	All chemical substances in this product are either listed on the TSCA Inventory or in compliance with a TSCA Inventory exemption.

Clean Air Act:

Section 12 (40 CFR 61):	This product does not contain any hazardous air pollutants (HAP)
Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):	None of the chemical substance(s) in this product are listed.

Clean Water Act:

Section 311, Table 116.4A (List of Hazardous Substances):	This product does not contain any hazardous substance(s) listed.
Section 311, Table 117.3 (Reportable Quantities of Hazardous Substances List):	None of the chemical substance(s) in this product are listed.
Section 307 (Toxic and Priority Pollutants):	This product does not contain any toxic or priority pollutants.

Proposition 65 (California):

Chemicals Known to Cause Cancer:	This product does not contain any hazardous substance(s) listed.
Chemicals Known to Cause Reproductive Toxicity for Females:	None of the chemical substance(s) in this product are listed.
Chemicals Known to Cause Reproductive Toxicity for Males:	None of the chemical substance(s) in this product are listed.
Chemicals Known to Cause Developmental Toxicity:	None of the chemical substance(s) in this product are listed.

State RTKHSL (Right to Know Hazardous Substance List):

State	CAS Number	Chemical Name
Massachusetts	124-04-9	Adipic Acid
New Jersey	124-04-9	Adipic Acid
Pennsylvania	124-04-9	Adipic Acid

Carcinogenic Categories:

EPA (Environmental Protection Agency):	None of the chemical substance(s) in this product are listed.
IARC (International Agency for Research on Cancer):	None of the chemical substance(s) in this product are listed.
TLV (Threshold Limit Value Established by ACGIH):	None of the chemical substance(s) in this product are listed.
NIOSH-CA (National Institute for Occupational Safety and Health):	None of the chemical substance(s) in this product are listed.

Canada:

DSL (Canadian Domestic Substances List):	All of the chemical substance(s) in this product are either listed on the DSL Inventory or in compliance with a DSL exemption.
WHMIS (Workplace Hazardous Materials Information System)	None of the chemical substance(s) in this product are listed.
NPRI (The National Pollutant Release Inventory)	YES. On the inventory, or in compliance with the inventory.
CEPA (Canadian Environmental Protection Act)	No, material is listed.
Canadian Ingredient Disclosure list (limit 0.1%)	None of the ingredients is listed.
Canadian Ingredient Disclosure list (limit 1%)	124-04-9 adipic acid

Other Regulations, Limitations and Prohibitive Regulations:

Substances of Very High Concern (SVHC) According to REACH, Article 57	None of the chemical substances in this product are listed.

Switzerland:

CH INV (New Notified Substances and Declared Preparations):	YES. Adipic acid has been notified.

Germany:

MAK (German Maximum Workplace Concentration):	None of the chemical substance(s) in this product are listed.

Australia:

AICS (Australia Inventory of Chemical Substance):	YES. On the inventory, or in compliance with the inventory.

New Zealand:

NZIoC (New Zealand Inventory of Chemical Substances):	NO. On the inventory, or in compliance with the inventory.

Japan:

ENCS (Existing and New Chemical Substances Inventory):	YES. On the inventory, or in compliance with the inventory
ISHL - (Inventory of Chemical):	YES. On the inventory, or in compliance with the inventory

Korea:

KECI (Korean Existing Chemicals Inventory:	YES. On the inventory, or in compliance with the inventory.

Philippines:

PICCS (Philippines Inventory of Chemicals and Chemical Substances):	YES. On the inventory, or in compliance with the inventory.

China

IECSC (Inventory of Existing Chemical Substances in China):	YES. On the inventory, or in compliance with the inventory

15.2 CHEMICAL SAFETY ASSESSMENT:

- A Chemical Safety Assessment has not been carried out.

SECTION 16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Legend:

ADRADR: Accord Européen sur le Transport des Marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
AICS: Australia Inventory of Chemical Substances
CA: California
CAS: Chemical Abstract Services (division of the American Chemical Society)
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CH INV: Switzerland. New Notified Substances and Declared Preparations
CSA: Canadian Standards Association
DNEL: Derived No-Effect Level (REACH)
DOT: Department of Transportation
DSL: Canadian Domestic Substance List
ECHA: European Chemical Agency
ENCS: Japanese Existing and New Chemical Substances Inventory
EPA: Environmental Protection Agency

GHS: Globally Harmonized System of Classification and Labelling of Chemicals
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
IECSC: Inventory of Existing Chemical Substances in China
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
ISHL: Japanese Inventory of Chemical Substances
KECI: Korean Existing Chemicals Inventory
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MAK: German Maximum Workplace Concentration
MN: Minnesota
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NTP: National Toxicology Program
NZIoC: New Zealand Inventory of Chemical Substances
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible Exposure Limit
PICCS: Philippines Inventory of Chemicals and Chemical Substances
PNEC: Predicted No-Effect Concentration (REACH)
RCRA: Resource Conservation and Recovery Act
REACH: EC 1907/2006
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References:

Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2015 (Chempendium, RTECs, HSDB, INCHEM).
European Chemicals Agency, Classification Legislation, 2015
Material Safety Data Sheet from Manufacturer/Distributor.
OECD: Organization for Economic Co-operation and Development, 2015

Version 1.0	For the New GHS SDS Standard	Revision Date: 12/15/2014
Version 1.1	Hazard and Precautionary Statements	Revision Date: 02/04/2015
Version 1.2	Updated Graphics	Revision Date: 03/09/2015
Version 1.3	UN#, ICC GHS Edits	Revision Date: 05/20/2015
Version 1.4	Edits in Section 9	Revision Date: 05/21/2015
Version 1.5	Edits to Section 5	Revision Date: 06/02/2015
Version 1.6	Additions to Section 9	Revision Date: 06/25/2015

Other Special Considerations for Handling:

- Provide adequate information, instruction and training for operators.

Miscellaneous Hazard Classes:

Canadian Carcinogenicity Hazard Class: *Not Applicable.*
Physical Hazards Not Otherwise Classified (PHNOC): *Not Applicable.*
Health Hazards Not Otherwise Classified (HHNOC): *Not Applicable.*

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DISCLAIMER:

The information in this material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The user must determine the appropriate measures that need to be implemented for the use and handling of this product in the context of the user's operations and use of this product. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old,call to make certain that this sheet is current. No warranty is made as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. User must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. Nothing contained herein shall be construed as granting or extending any license under any patent.

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End of Safety Data Sheet