



USIQUÍMICA

MATERIAL SAFETY DATA SHEET - MSDS

POLYMER - USIFLOC A 5700

REVISION DATE: 05/18/2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Polymer - Usifloc A 5700

Internal Code of product identification: 132.35.2.

Company name: USIQUÍMICA DO BRASIL LTDA.

Address: Rua da Lagoa, 431 – Cumbica – Guarulhos – SP.

Company Phone: + 5511 3821-7000 (PBX system) – + 5511 2481-3355.

Emergency phone: SUATRANS - COTEC - Environmental Emergency.

DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.

193 – Firefighters.

Main recommended uses for the substance: Flocculating agent used in water treatment.

2. HAZARDS IDENTIFICATION

Classification of Substance:

Acute toxicity - oral - Category 5 Corrosive/irritating to skin - Category 2

Serious eye damage / eye irritation - 2A Category

Adverse effects on human health:

Inhalation: May cause respiratory system irritation if dust is inhaled.


Eye contact: May cause eye irritation which should cease after product removal.

Skin contact: In case of prolonged exposure to the product, skin irritations are possible.

Environmental effects: Low toxicity CL₅₀/EC₅₀ for aquatic organisms, but may not cause long-term adverse effects in the aquatic environment.

Specific hazards: This type of product tends to form dust when handled roughly. It won't burn easily, but like many organic dusts, flammable dust clouds can form in the air. Very slippery when wet.

GHS label elements, including precautionary phrases:

LABEL ELEMENTS	DATA
Product identification and supplier emergency telephone number.	Commercial Name: Polymer. Synonym: Polyacrylamide (PAM). Emergency phone: SUATRANS - COTEC - Environmental Emergency. DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.
Hazard pictograms.	
Warning words.	ATTENTION
Danger phrases.	H402 - Harmful to aquatic organisms.
Precautionary phrases.	P280- Use protective gloves/protective clothing/eye protection/face protection. P303 + P361 + P353- IN CASE OF SKIN CONTACT (or with the hair): Remove immediately all contaminated clothing. Wash the skin with water/take a shower. P304+P340+P310 - IN CASE OF INHALATION: Remove the person to a ventilated area and keep the person in a rest position that does not make it difficult to breathe. Contact a TOXICOLOGICAL INFORMATION CENTER or physician immediately. P305+P351+P338+P310 - IN CASE OF EYE CONTACT: Rinse thoroughly with water for several minutes. If contact lenses are used, remove them if it is easy. Continue rinsing. Contact a TOXICOLOGICAL INFORMATION CENTER or physician immediately.

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	P308 + P311- IN CASE OF exposure or suspected exposure: Contact a TOXICOLOGICAL INFORMATION CENTER/doctor.
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3. COMPOSITION AND INFORMATION ABOUT INGREDIENTS**Substance:** Polyacrylamide.**Common chemical name or generic name:** Anionic polymer.**Chemical Abstract Service (CAS No):** 9003-05-8.**Impurities that contribute to the danger:** Not applicable.**4. FIRST AID MEASURE****First aid measures:****Inhalation:** Remove casualty to uncontaminated, ventilated area. If breathing is difficult, give oxygen. Apply resuscitation maneuvers in case of cardiorespiratory arrest. Immediately forward to the nearest hospital.**Skin contact:** Remove clothing contaminated by the product. Wash contact areas with plenty of water. If irritation persists, seek medical attention.**Eye contact:** Immediately wash eyes with running water for 15 minutes, lifting eyelids to allow maximum removal of product. seek medical attention.**- Ingestion:** If a large amount of this substance is ingested, refer immediately to a doctor.**What actions must be avoided:** Do not induce vomiting. If vomiting occurs spontaneously, the victim must be laid on their side to prevent pulmonary aspiration. Never administer liquids to unconscious victims.**Brief description of the main symptoms and effects:** May cause respiratory system irritation if dust is inhaled. May cause eye irritation which should cease after product removal. In case of prolonged exposure to the product, skin irritations are possible.**Notes to the physician:** Avoid contact with the product to help the victim. Keep victim at rest and warm. Do not give anything by mouth to an unconscious person. The symptomatic treatment must include, above all, supportive measures such as correction of hydro electrolytic, metabolic disorders, as well as respiratory assistance. In case of contact with the skin and/or eyes, do not rub the affected parts.**5. FIRE FIGHTING MEASURES****Suitable extinguishing measures::** dry chemical powder, foam.**Inappropriate extinguishing measures:** water jet, carbon dioxide.**Other relevant information:** If water is used, restrict pedestrian and vehicle traffic in areas where there may be a danger of slipping.**Specific hazards:** carbon oxides, nitric oxides. Substances/groups of substances can be emitted in case of fire. Very slippery when wet.**Additional indications:** The hazard depends on the burning products and the fire conditions. Contaminated fire-fighting water must be disposed of in accordance with official local regulations.**Fire fighter Protection:** Special protective equipment for personnel assigned to fight fires. Do not stay in the danger zone without self-contained breathing apparatus suitable for breathing independently of the environment. To avoid skin contact, maintain a safe distance and wear suitable protective clothing.

Refresh closed containers exposed to fire with water spray. Suppress (shoot down) with water jets (fog) gases, vapors and mists. Avoiding contamination of surface water and groundwater with firefighting water.

6. MEASURES OF CONTROL FOR ACCIDENTAL SPILLS OR LEAKAGE**Personal precautions, protective equipment and emergency procedures:****Personnel who are not part of the emergency services:** Do not breathe vapors or aerosols. Avoiding contact with the substance. Ensuring adequate ventilation. Evacuating the danger area, observe emergency procedures. If necessary, consult an expert.**For the staff of the emergency department:** Use complete PPE, with protective PVC gloves, safety glasses with side protection and suitable protective clothing. The material used must be waterproof. In case of large leaks, where exposure is large, the use of a protective mask with a filter against vapors or mists is recommended.



Spilled product that gets wet or spills from aqueous solutions creates a hazardous condition due to its slippery nature. Avoid generation of dust.

Removal of ignition sources: Keep away from sources of heat and ignition. Urea presents a risk of decomposition when exposed to heat or flame.

Prevention of inhalation and contact with skin, mucous membranes and eyes: See Section 8, Field: "Appropriate Personal Protective Equipment".

Precautions to the environment: Prevent spilled product from entering water courses. Collect the spilled product, place the material in appropriate containers for proper final destination.

Methods and materials for containment and cleaning: Use water mist or vapor suppressing foam to reduce vapor dispersion. Use natural or spill containment barriers. Collect spilled product and place in proper containers.

Disposal: Waste must be disposed of in accordance with current Environmental Legislation. Keep chemicals in their original containers. Do not mix with other waste. Handling dirty containers must be carried out in the same way as the product itself. An MSDS of the generated waste must be generated.

Differences in the action of large and small leaks: There is no differentiation.

7. HANDLING AND STORAGE

Handling:

Technical measures Using only in areas provided with adequate exhaust ventilation. Providing the product handling area with a set of emergency shower and eye wash. Handling must only be done with the indicated PPE and under safe conditions.

Prevention of worker's exposure: Avoiding the formation of vapors/aerosols. Working with exhaust / chimney. Do not inhale the substance/mixture. Using specific PPE's - splash goggles, face shield, PVC gloves and protective clothing. Avoid inhaling vapors.

Wash after handling and decontaminate PPE's after use. PPE's must be approved for use only with the respective CAs – Certificates of Approval.

Precautions and guidelines for safe handling: Use personal protective equipment (PPE) to avoid direct contact with the product. Handling the product in a well-ventilated place. Forms a slippery layer with water.

Storage:

Appropriate: Keep container tightly closed in a dry, cool and well-ventilated area. Keep in a cool, dry place in unopened original packaging. Avoid damp, wet and lightly wet conditions, temperature extremes and sources of ignition.

To avoid: Avoid extreme heat.

Hygiene measures:

Appropriate: Always sanitize your hands before handling any food, as there is a risk of food contamination. Contaminated clothing must be washed and sanitized before use. Always keep gloves free from moisture and decontaminated.

Inappropriate: Direct contact with the product and/or its residues.

Technical measures

Suitable conditions: Keep containers closed and in a well-ventilated place. Keep containers away from heat and direct sunlight. Avoid extreme temperatures. Avoid moisture.

Safe materials for packaging:

Recommendations: Original material.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Parameters of specific control:

Occupational exposure limits:

Respirable particulates not specified: TWA value 3 mg/m³ (ACGIH). Inhalable particles not specified: TWA value 10 mg/m³ (ACGIH).

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Biological indicators: Not found.



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Other limits and values: N.A.

Measures of engineering control: Handling the product in a place with good natural or mechanical ventilation, in order to keep the concentration of vapors/dust below the tolerance limit. Provide mechanical ventilation and direct exhaust system to the outside environment. These measures help to reduce exposure to the product. It is recommended to make emergency showers and eye washes available in the work area. Engineering control measures are most effective in reducing product exposure.

Appropriate Personal Protective Equipment:

Appropriate respiratory safety equipment in case of low concentrations or short term exposure: Medium efficiency filter for solid and liquid particles.

Hand protection: Chemical resistant gloves.

Eye protection: Safety glasses with side shields (framed glasses).

Protection of the skin and body: Lightweight clothing to protect.

Hygiene measures: Hands and face should be washed before breaks and at the end of the shift. Remove immediately all contaminated clothing. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.

Form: Powder.

Color: Cream

Odor and odor limit: Odorless.

pH: 6 to 8 (5 g/L solution).

Melting point: Not available.

Freezing point: Not available.

Initial boiling point and boiling temperature range: Not available.

Flash point: Not available.

Evaporation rate: Not available.

Flammability (solid): Not available.

Lower/upper flammability or explosiveness limit: Not available.

Vapor pressure: Not available.

Vapor Density: Not available.

Relative Density 600 to 800 kg/m³.

Solubility: Soluble in the form of a viscous solution.

Partition coefficient - n-octanol / water: Not available.

Auto-ignition temperature: Not available.

Decomposition temperature: Not available.

Viscosity: Viscosity varies according to percentage (w/v).

10. STABILITY AND REACTIVITY

Specific conditions:

Reactivity: As supplied, the product is not likely to produce a dust explosion, however fine dust accumulation leads to this hazard.

Chemical stability: The product is stable under normal conditions. In the presence of heat, urea becomes unstable and decomposes. Does not polymerize.

Conditions to avoid: Avoid extreme temperatures. Avoid moisture.

Materials or incompatible substances: Urea can be slightly corrosive to steel, aluminum, zinc and copper.

Hazardous decomposition products: Strong acids, strong bases, strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

Information according to the different routes of exposure:

Acute toxicity: LD50 rat (oral): > 5,000 mg/kg (OECD Guideline 401).

Skin corrosion/irritation: Not available.

Severe ocular lesions/eye irritation: Not available.

Respiratory or skin sensitization: Not available.

Germ cell mutagenicity: It has no mutagenic effect.



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Carcinogenicity: It has no carcinogenic effect.

Reproductive toxicity: It has no toxic effect on reproduction.

Specific target organ toxicity– single exposure: Not available.

Specific target organ toxicity– repetitive exposure: Not available.

Aspiration hazard: Not available.

12. TOXICOLOGICAL INFORMATION

- Environmental effects, behaviors and impacts of the product:

Ecotoxicity: Assessment of aquatic toxicity: Toxicity in aquatic environments is drastically reduced by the irreversible adsorption of organic matter in suspension/solution to the surface. The acute effects on aquatic organisms are caused entirely by the cationic charges of the polymer, which is quickly completely neutralized in waterways by irreversible particulate absorption, hydrolysis and dissolved organic carbon. Hydrolysis products do not pose acute toxicity to aquatic organisms.

Fish toxicity: CL₅₀ (96 h) 10 - 100 mg/L (static).

Aquatic invertebrates: EC₅₀ (48 h) 10 - 100 mg/L.

Persistence and degradability:

Disposal Indications: Hardly biodegradable (according to OECD criteria).

Expected behavior/Environmental impact:

Indications regarding stability in water (hydrolysis):

t_{1/2} > 70% (28 Days) (pH value > 6). With water, the substance hydrolyzes quickly.

Mobility:

Indications for: Ethanaminium, N,N,N-trimethyl-2-[(1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-propenamide.

Assessment of transport between environmental compartments:

Adsorption to solid soil phase is expected.

Bioaccumulation:

Bioaccumulation potential assessment:

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

Additional indications:

Other ecotoxicological indications:

The product has not been tested. The statement comes from products with a similar structure or composition.

13. CONSIDERATIONS ABOUT THE FINAL DISPOSAL

Recommended methods for final disposal:

The treatment and disposal of product residues must be done in a suitable environment, by people trained in the use of special equipment and the recommended PPE's to avoid contact with the product, its vapors or mists. Leaks must be contained and collected for later disposal after neutralization.

Product:

Ensure all Federal, State and local agencies receive proper notice of spills and disposal methods. CONAMA Resolution 005/1993, Law No. 12,305, as of August 2, 2010 (National Solid Waste Policy).

Product waste:

Consult environmental regulatory agencies for advice on acceptable regulatory practices. Come in contact with relevant local authorities. It can be incinerated when in compliance with local regulations. Or dispose of in an approved chemical waste landfill.

Used Package:

Empty containers must be drained and covered before handling and transport operations. If the package is not properly washed and decontaminated, it is considered to contain the product.

14. TRANSPORT INFORMATION

National and International Regulations



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Land:

Resolution No. 5232 as of December 14, 2016 of the Brazilian National Land Transport Agency (ANTT), *Approves the Supplementary Instructions to the Land Transport of Dangerous Goods Regulations and their amendments.*

UN number: Product not covered by current regulations on the transport of dangerous products.

Appropriate name for shipment: -

Risk class: -

Risk subclass: -

Risk number: -

Packing group: -

Waterway:

DPC – Directorate of Ports and Coasts (Transport in Brazilian waters) Maritime Authority Regulations (NORMAM) NORMAM 01/DPC: Vessels Used in Open-seas Navigation

UN number: Product not covered by current regulations on the transport of dangerous products.

Appropriate name for shipment: -

Risk class: -

Risk subclass: -

Risk number: -

Packing group: -

- Air Transport:

ANAC - National Civil Aviation Agency - Resolution No. 129 as of January 8, 2009

RBAC N°175 - (BRAZILIAN CIVIL AVIATION REGULATION) - TRANSPORTATION OF DANGEROUS ITEMS IN CIVIL AIRCRAFT

IS No. 175-001 - SUPPLEMENTARY INSTRUCTION - IS

ICAO – International Civil Aviation Organization – Doc 9284-NA/905 IATA – International Air Transport Association Dangerous Goods Regulation (DGR)

UN number: Product not covered by current regulations on the transport of dangerous products.

Appropriate name for shipment: -

Risk class: -

Risk subclass: -

Risk number: -

Packing group: -

15. REGULATIONS INFORMATION

Specific regulations for the chemical product:

Federal Decree No. 2,657, as of July 3, 1998;

Standard ABNT-NBR 14725: 2014;

Ordinance No. 229, as of May 24, 2011 – Changes Regulatory Standard No. 26.

16. OTHER INFORMATION

The information on this sheet corresponds to the current state of our knowledge and experience of the product and is not exhaustive. It applies to the product under the conditions specified, unless otherwise stated. In case of combinations or mixtures, make sure that no new danger can appear. This information does not, in any case, exempt the user of the product from complying with all legislative, regulatory and administrative texts relating to the product, safety, hygiene and protection of human and environmental health.

Bibliographical References:

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BRAZIL. MINISTÉRIO DO TRABALHO E EMPREGO (MTE). Regulatory Standard (NR) No. 15: Unhealthy activities and operations.



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