



SAFETY DATA SHEET FOR CHEMICALS
MSDS

POLYMER - USIFLOC C 3400

REVISION DATE: 5/18/2018

1. - IDENTIFICATION OF PRODUCT AND COMPANY

Product name: Polymer - Usifloc C 3400

Internal Code of product identification: 136.35.2.

Company name: USIQUÍMICA DO BRASIL LTDA.

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

Company Phone: (11) 3821-7000 (PBX system) - (11) 2481-3355.

Emergency call numbers: 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

Substances classification:

Acute toxicity - Oral - Category 5

Corrosive/irritation to skin- Category 2

Serious eye damage / eye irritation - Category 2A

Adverse effects to the human health:

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


Eye contact: It can cause eye irritation, which must stop after removing the product.

Skin contact: In case of prolonged exposure to the product, skin irritation is possible.

Environmental effects: Low toxicity CL₅₀/ CE₅₀ 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 will not burn easily, but like many organic powders, flammable dust clouds can form in the air. Very slippery when wet.

GHS labeling elements, including precautionary phrases:

LABELING ELEMENTS	DATA
Product identification and supplier emergency phone.	Commercial Name: Polymer. Synonym: Polyacrylamide (PAM). Emergency call number: SUATRANS - COTEC - Environmental Emergency. DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.
Hazard pictogram.	
Warning words.	ATTENTION
Hazard phrase.	H402 - Harmful to aquatic organisms.
Caution Phrases.	P280 - Use protective gloves/protective clothing/eye protection/face shield. P303+P361+P353 - IN CASE OF SKIN CONTACT (or with the hair): Remove immediately all contaminated clothing. Rinsing 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. Please Immediately contact a TOXICOLOGICAL INFORMATION CENTER/physician. 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. Please Immediately contact a TOXICOLOGICAL INFORMATION CENTER/physician.



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	P308+P311 - IN CASE OF exposure or suspected of exposure: Please contact a TOXICOLOGICAL INFORMATION CENTER/physician.
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3. - COMPOSITION AND INFORMATION ON THE INGREDIENTS:

Substance: Polyacrylamide.

Common chemical name or generic name: Cationic polymer.

Chemical Abstract Service (CAS No.): 5/8/9003.

Impurities that contribute to the hazard: Not applicable.

4. - FIRST AID MEASURES:

First aid measures:

Inhalation: Remove the victim to an uncontaminated and ventilated area. If you are breathing hard, administering oxygen. Apply resuscitation maneuvers in case of cardiorespiratory arrest. Immediately forward to the nearest hospital.

Skin contact: Remove clothing contaminated by the product. Wash the victim's mouth with plenty of water. If irritation persists, seek to physician.

Eye contact: Wash at once the eyes under running water for 15 minutes, lifting the eyelids to allow maximum product removal. Refer to the physician.

Ingestion: If a large amount of this substance is ingested, see to physician immediately.

What actions must be avoided: Do not induce vomiting. If vomiting occurs spontaneously, the victim shall be lying on his side to prevent pulmonary aspiration. Never administer liquids to unconscious victims.

Brief description of the main symptoms and effects: May cause irritation of the respiratory system if dust is inhaled. It can cause eye irritation, which must stop after removing the product. In case of prolonged exposure to the product, skin irritation is possible.

Notes to the physician: Avoid contact with the product to help the victim. Keep the victim on standing and heated. Do not give anything by mouth to an unconscious person. Symptomatic treatment must include, mainly, 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

Extinguishing measures appropriate: dry chemical, foam.

Not appropriate extinguishing measures: water jet, carbon dioxide.

Other relevant information: If water is used, restrict pedestrian and vehicle traffic in areas where there is a risk of slipping.

Specific hazards: carbon oxides, nitric oxides. Substances / groups of substances can be emitted in the event of fire. Very slippery when wet.

Additional information: The danger depends on the burning products and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official local legislation.

fire fighter protection: Special protective equipment for personnel deployed for firefighting. Do not stay in the danger zone without self-contained breathing apparatus suitable for breathing independently of the environment. To avoid contact with the skin, keep a safe distance and wear suitable protective clothing.

Refresh closed containers exposed to fire with sprayable water. Suppress (throw) with water jets (fog) the gases, vapors and mists. Avoid to contamination of surface water and groundwater with water to fire fighting.

6. - MEASURES OF CONTROL FOR SPILL OR LEAK

Personal precautions, protective equipment and emergency procedures:

Staff that is not part of the emergency services: Do not breathe vapor or aerosols. Avoid to contact with the substance. Ensuring adequate ventilation. Evacuating the hazard area, observe emergency procedures. If necessary, consult a specialist.

For the staff of the emergency department: Using complete PPE, with PVC protective gloves, safety glasses with side protection and appropriate protective clothing. The material used must be waterproof. In case of large leaks, where exposure is large, it is recommended to use a protective mask with a filter against vapors or mists. Spilled product that gets wet or spills of aqueous solutions creates a hazardous condition due to



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its slippery nature. Avoid to formation of dust.

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

Prevention of inhalation and contact with skin, mucous membranes and eyes: Please see Section 8, Field: "Appropriate personal protective equipment".

Precautions to the environment: Avoid to spilled product reaching watercourses. Collect the spilled product, place the material in appropriate containers for proper final disposal.

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

Disposal: The waste must be disposed in according with the current environmental legislation. Keep chemicals in their original containers. Do not mix with other wastes. The handling of dirty containers must be conducted in the same way as the product itself. An MSDS must be generated from the generated waste.

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

7. - HANDLING AND STORAGE

Handling:

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

Prevention of worker's exposure: Avoid a formation of vapors / aerosol. Working with exhaust / chimney. Do not inhale the substance / mixture. Wear specific PPEs - splashes glasses, face shield, PVC gloves and protective clothing. To avoid inhaling vapors.

Washing after handling and decontaminate PPEs after use. The PPEs 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 the container hermetically sealed in a dry, cool and well-ventilated area. Storing in a cool, dry place in unopened original packaging. Avoid to humid, wet and slightly wet conditions, extremes of temperature and sources of ignition.

To be avoided: Avoid extreme heat.

Hygiene measures:

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

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

Technical measures:

Adequate conditions: Keeping containers closed and in a well-ventilated place. Keep containers protected from heat and direct sunlight. Avoid extreme temperatures. Avoid to moisture.

Packaging safe materials: Recommended: Original material.

8. - EXPOSURE CONTROLS AND INDIVIDUAL PROTECTION

Parameters of specific control:

Occupational exposure limits:

Breathable particulates not specified: TWA value 3 mg / m³ (ACGIH).

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

Biological indicators: Not found.

Other limits and values: N.A.



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

Appropriate personal protective equipment:

Adequate 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 (glasses with frames).

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

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

9. - PHYSICAL AND CHEMICAL PROPERTIES

Physical condition: Solid.

Form: Powder.

Color: Cream.

Odor and odor limit: Odorless.

p.H: 5 to 7 (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 a 800 kg/m³.

Solubility: Soluble in the form of a viscous solution.

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

Autoignition temperature: Not available.

Decomposition temperature: Not available.

Viscosity: The viscosity varies according to the percentage (m / v).

10. - STABILITY AND REACTIVITY

Specific conditions:

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

Chemical stability: Product is stable under normal condition. In the presence of heat, urea becomes unstable and decomposes. It does not polymerize.

Conditions to be avoided: Avoid extreme temperatures. Avoid to 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 manners of exposure:

Acute Toxicity: DL50 rat (oral): > 5,000 mg / kg (OECD, Guideline 401).

Corrosion/irritation of skin: Not available.

Severe ocular lesions/eye irritation: Not available.

Respiratory or skin sensitization: Not available.

Germ cell mutagenicity: It has no mutagenic effect.

Carcinogenicity: It has no carcinogenic effect.



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MSDS

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Reproductive toxicity: Not classified for reproductive toxicity.
Toxicity to organs - specific targets - single exposure: Not available.
Toxicity to organs - specific targets - repetitive exposure: Not available.
Aspiration hazard: Not available.

12. - ECOLOGICAL INFORMATION

Environmental effects, behaviors and impacts of the product:

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

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

Aquatic invertebrates: CE₅₀ (48 h) 10 - 100 mg/L.

Persistence and degradability:

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

Expected behavior / Environmental impact:

Indications regarding water stability (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-propenamido.

Evaluation of transport between environmental compartments:

Solid phase adsorption of soil is expected.

Bioaccumulation:

Assessment of bioaccumulation potential:

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

Additional information

Other ecotoxicological indications:

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

13. - CONSIDERATION ON THE FINAL DISPOSAL

Recommended methods for final destination:

The treatment and disposal of product wastes must be carried out in an appropriate environment, by people trained with the use of special equipment and the recommended PPEs to avoid contact with the product, its vapors or mists. Leaks must be contained and collected for later disposal after neutralization.

Product:

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

Waste of products:

Please consult environmental regulatory agencies for counselling on the acceptable disposal practices. Please contact the relevant local authorities. It can be incinerated when in compliance with local regulations. Or dispose of at an approved chemical waste landfill.

- Used Package:

Empty packages must be drained and covered before handling and transport operations. If the packaging is not conveniently washed and decontaminated, it is considered to contain product.

14. - TRANSPORT INFORMATION

National and International Regulations Land:



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Resolution No. 5232 of as Wednesday, December 14, 2016 of the National Land Transport Agency (ANTT), *Approves the Supplementary Instructions to the Regulation for the Land Transportation of Dangerous Products and their modifications.*

ONU number: Product not classified by the Legislation in force on the o transport of dangerous products.

Appropriate name for shipment: -

Risk class: -

Risk subclass: -

Risk number: -

Packaging group: -

Waterway:

DPC - Directorate of Ports and Coasts (Transport in Brazilian waters) Maritime Authority Standards (NORMAM) NORMAM 01 / DPC: Vessels Employed in Open Sea Navigation

ONU number: Product not classified by the Legislation in force on the o transport of dangerous products.

Appropriate name for shipment: -

Risk class: -

Risk subclass: -

Risk number: -

Packaging group: -

Air:

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

RBAC No. 175 - (BRAZILIAN CIVIL AVIATION REGULATION) - TRANSPORT OF DANGEROUS MATERIALS 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)

ONU number: Product not classified by the Legislation in force on the o transport of dangerous products.

Appropriate name for shipment: -

Risk class: -

Risk subclass: -

Risk number: -

Packaging group: -

15. - INFORMATION ON THE REGULATIONS

Specific regulations for the chemicals:

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

Standard ABNT-NBR 14725:2014;

Ordinance No. 229, of as May 24, 2011 - Amends Regulatory Standard No. 26.

16. - OTHER INFORMATION

The information in this sheet corresponds to the current status of our knowledge and our product experience and is not exhaustive. Applies to the product under the conditions specified, unless mention otherwise. In case of combinations or mixtures, make sure that no new hazards can appear. This information does not exempt, in any case, the user of the product from respecting the all legislative, regulatory and administrative texts related to the product, safety, hygiene and protection of human and environmental health.

Bibliographical References:

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS. TLVs® and BEIs®: Based on the "Documentation" dos Limites de Exposição Ocupacional (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Brazilian Association of Occupational Hygienists Translation. São Paulo, 2016.

BRAZIL. MINISTRY OF LABOR AND EMPLOYMENT (MTE) Regulatory Standard (NR) No. 7: Programa de controle médico de saúde ocupacional. Brasília, DF. Jun. 1978.

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MSDS

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