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CHEMICAL PRODUCT SAFETY INFORMATION SHEET

ANTI BUBBLE

Adhesive for Acrylic

FISPQ · K420

Date 13/03/23

01 PRODUCT AND COMPANY IDENTIFICATION

Trade name of the product	Adhesive for Acrylic ANTI BUBBLE
Internal code	K420
Product identification	Adhesive for Acrylic ANTI BUBBLE
Company	Bold S.A
CNPJ (Brazilian company registration number)	04.626.152/0002-36 - 04626152000236
Address	Rua Manoel Francisco da Costa de 5242/5243 Ao Fim 5464, Joao Pessoa - Jaraguá do Sul SC 89257-735 - Brazil
Telephone	+55 (47) 3274-6500
Emergency telephone	Centro de Informações Toxicológicas (Brazil) 0800 7213000 (24 hours)

02 HAZARDS IDENTIFICATION

This product has been classified in accordance with the Brazilian standard ABNT NBR 14725-2, Chemical Products – Information on safety, health and environment – Part 2: Hazard Classification System.

Hazard classification

- Skin irritation – Category 2
- Eye irritation – Category 2A
- Carcinogenicity – Category 2
- Specific target organ toxicity – single exposure – Category 3
- Specific target organ toxicity – repeated exposure – Category 2



Signal word: **DANGER**

Hazards

- Causes skin irritation.
- Causes serious eye irritation.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.
- Suspected of causing cancer.
- May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

- Obtain special instructions before use.
- Do not handle the product until all safety precautions have been read and understood.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wash skin thoroughly after handling.
- Wear protective gloves/protective clothing/eye protection/face protection.

Response

- IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, call a POISON CENTER/doctor.
- IF exposed or concerned: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.

Storage

- Store in a well-ventilated place. Keep container tightly closed.

Disposal

- Dispose of contents/container at an approved waste treatment plant.

Other hazards

Toxic fumes may be released in a fire.

03 COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS	Percentage
1-Trichloromethane	67-66-3	10-35
Toluene	108-88-3	10-35
Resins and additives	Not available	20-30

04 FIRST-AID MEASURES

Description of first-aid measures

General advice: First aiders should pay attention to the protective equipment required and use it (protective gloves and splash protection). If there is a potential for exposure, refer to Section 8 for specific personal protective equipment.

Inhalation: Move to fresh air. If not breathing, give artificial respiration; for mouth-to-mouth resuscitation, use a rescuer protection device (special half-mask). If breathing has stopped or is difficult, oxygen should be administered by qualified personnel. Call a doctor or transport to a medical facility.

Skin contact: Wash with plenty of water.

Eye contact: Rinse eyes with running water; remove contact lenses, if worn, after the first 5 minutes, and continue rinsing the eyes for at least 15 minutes. Seek medical attention without delay, preferably from an ophthalmologist. A suitable emergency eye wash should be immediately available.

Ingestion: Do not induce vomiting. Call a doctor and/or transport to an emergency service immediately.

Most important symptoms and effects, both acute and delayed: In addition to the information found under Description of first-aid measures (above) and indications of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicological Information.

Indication of immediate medical attention and special treatment needed

Notes to physician: Maintain adequate ventilation and oxygenation of the patient. Treat with 100% oxygen. Exposure may increase “myocardial irritability”. Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. If aspirated, rapid absorption through the lungs may occur and cause systemic effects; the decision of whether or not to induce vomiting should be made by the physician. If gastric lavage is performed, endotracheal and/or esophageal control is suggested. The danger of lung aspiration must be weighed against toxicity when considering emptying the stomach. If burns are present, treat as thermal burns after decontamination. There is no specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Carboxyhemoglobinemia may aggravate any pre-existing condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias. Skin contact may aggravate pre-existing dermatitis.

05 FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical powder extinguishers. Carbon dioxide extinguishers. Foam. Gently applied water fog may be used as a blanket to extinguish the fire.

Extinguishing media to avoid: Not determined

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products, which may include, but are not limited to: Hydrogen chloride (hydrochloric acid). Carbon monoxide, Carbon dioxide. Combustion products may contain traces of: PHOSGENE, CHLORINE

Unusual fire and explosion hazards: Container may vent and/or rupture due to fire. Although this material has no flash point, it may burn at room temperature. Vapours are heavier than air and may travel long distances and accumulate in low-lying areas.

Advice for firefighters

Firefighting procedures: Keep people away. Isolate the hazard area and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Use water spray to cool fire-exposed containers and fire-affected zones until the fire is out and the danger of reignition has passed. Immediately withdraw all personnel from the area in case of rising sound from the venting safety device or discoloration of the container. Move the container from the fire area if this can be done without risk. To protect personnel and minimize damage, burning liquids may be removed by flushing with water. Gently applied water fog may be used as a blanket to extinguish the fire.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus and protective firefighting clothing (including firefighting helmet, coat, trousers, boots and gloves). If protective equipment is not available or not used, fight the fire from a protected location or a safe distance.

06 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate the area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep personnel away from confined or poorly ventilated areas. Stay upwind of the leak. Ventilate the area of the leak or spill. Only trained and properly protected personnel should be involved in clean-up operations. Confined space entry procedures must be followed before entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: The material sinks in water. Prevent from entering soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Collect in suitable and properly labelled containers. Large spills: Dike area to contain the spill. Pump into a suitable and properly labelled container. See Section 13, Disposal Considerations, for additional information.

Removal of ignition sources: Keep away from sources of ignition.

Dust control: Not applicable.

07 HANDLING AND STORAGE

Precautions for safe handling: Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Containers, even those that have been emptied, can contain vapours. Do not cut, drill, grind, weld or perform similar operations on or near empty containers. Do not enter confined spaces without adequate ventilation. To prevent uncontrolled emissions, vent vapours from the container to the storage tank. Vapours of this product are heavier than air and lethal concentrations of vapours may accumulate in low, unventilated spaces. See Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage: Store in a dry, clean, cool, well-ventilated place away from sunlight. Do not handle or store near flames, heat or ignition sources. Keep container tightly closed when not in use. Do not store in: Zinc, Aluminium, Aluminium alloys, Plastic.

08 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure controls

Engineering controls: Use engineering controls to maintain airborne levels below established exposure limits. If there is no required or recommended exposure limit, use only in closed systems or with local exhaust ventilation. Exhaust systems should be designed to move air away from the source of vapour/aerosol generation and from people working at this location. Lethal concentrations may exist in areas with poor ventilation.

Individual protection measures

Skin/eye protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin protection

Hand protection: Always use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyvinyl alcohol ("PVA"), Ethyl vinyl alcohol laminate ("EVAL"), Viton. Examples of acceptable glove barrier materials include: Butyl rubber. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Always wear protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron or full suit will depend on the operation.

Respiratory protection: Atmospheric levels should be maintained below exposure guidelines. When respiratory protection is required, use an approved self-contained breathing apparatus or a positive-pressure airline with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or a positive-pressure airline with auxiliary self-contained air supply.

09 PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Physical state	Liquid
Colour	Colourless
Odour	Characteristic
pH	NA (not applicable)
Melting point/freezing point	-96.7 °C
Initial boiling point and boiling range	(760 mmHg) 39.8 °C
Flash point	Closed cup ASTM D56: None
Evaporation rate	Test data not available
Flammability (solid; gas)	NA
Lower/upper flammability or explosive limits	14% - 22%
Vapour pressure (mmHg at 20 °C)	335
Bulk density (g/cm^3)	1.33
Solubility in water	1.3% at 25 °C
Partition coefficient (n-octanol/water) – log Pow	1.25 Measured
Auto-ignition temperature	556 °C
Decomposition temperature	Test data not available
Viscosity	ND

10 STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product decomposition. Avoid open flames, welding arcs or other high-temperature sources that induce thermal decomposition. Avoid direct sunlight or ultraviolet light sources.

Incompatible materials: Avoid contact with oxidizing materials. Avoid contact with: Strong bases. Contamination with water may cause corrosion of metals due to the formation of hydrochloric acid. Avoid contact with metals such as: Zinc powder, Aluminium powder, Magnesium powder, Potassium, Sodium. Avoid unintended contact with: Amines.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include, but are not limited to: Hydrogen chloride (hydrochloric acid). Decomposition products can include trace amounts of: CHLORINE, PHOSGENE.

11 TOXICOLOGICAL INFORMATION

Skin contact: Prolonged or repeated exposure may cause skin irritation, even burns. Repeated contact may cause drying or flaking of the skin. May cause more severe effects if held against the skin. Intense skin contact, such as immersion, may cause an intense burning sensation, followed by a feeling of cold and numbness that continues after contact.

Ingestion: Single-dose oral toxicity is considered low. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury. Swallowing larger amounts may cause injury. If aspirated (liquid entering the lungs), it may be rapidly absorbed through the lungs and result in injury to other body systems.

Inhalation: In confined or poorly ventilated areas, vapours can readily accumulate and cause unconsciousness and even death. Excessive exposure may cause irritation of the respiratory tract. Excessive exposure may cause carboxyhemoglobinemia, impairing the blood's ability to transport oxygen. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Minimal anesthetic or narcotic effects may be seen in the range of 500-1000 ppm of dichloromethane. Progressively higher levels above 1000 ppm may cause dizziness and vertigo. Levels above 10000 ppm may cause unconsciousness and even death. These high levels may cause cardiac arrhythmia (irregular heartbeats).

- **Systemic effects:** Signs and symptoms of excessive exposure may include effects on the central nervous system. Excessive exposure may cause carboxyhemoglobinemia, thereby impairing the blood's ability to transport oxygen. In laboratory animals, effects have been observed on the liver and kidneys. Alcohol consumed before or after exposure may increase adverse effects. The relevance of these data to humans is unknown.
- **Cancer information:** According to the OSHA Standard (Occupational Safety and Health Administration of the United States) 29 CFR Part 1910.1200, this product is classified as a potential carcinogen by IARC (International Agency for Research on Cancer) and by NTP (National Toxicology Program).

Acute toxicity

Former supply form (approx. 75% in 2-ethoxyethyl acetate / xylene 1:1).

- LD_{50} oral rat: > 5,000 mg/kg
- LC_{50} inhalation rat: 400 to 425 mg as aerosol / m^3; 4 h exposure.

Subacute inhalation toxicity, rat:

- Test concentrations - 3.7; 17.5 and 76.6 mg aerosol/m^3
- Exposure time - 3 weeks (6 h/day; 5 days/week)
- 3.7 mg/m^3 - tolerated without any injury (NOEL)
- 17.5 and 76.6 mg/m^3 - increased lung weight; pronounced inflammatory changes in the respiratory organs.

All changes are non-specific and are therefore attributed to the primary irritation potential. Apart from the respiratory organs, no symptoms of injury were observed.

Sensitization

May cause sensitization and irritation.

In the event of excessive exposure - particularly during spray application without protective measures (see item 8) - irritation of the eyes, nose and respiratory tract and the delayed onset of disorders (asthma, breathing difficulties, coughing) are possible. Hypersensitive persons may also react with irritation at very low isocyanate concentrations, even below the TLV (MAK) value. In the event of prolonged skin contact, irritation and tanning effects are possible.

Chronic toxicity

By inhalation, rat:

- Test concentrations - 0.4; 3.4 and 21.0 mg aerosol/m^3
- Exposure time - 13 weeks (6 h/day; 5 days/week)
- OECD No. 413; 1988
- 3.4 mg/m^3 - tolerated without any injury (NOEL)
- 21.0 mg/m^3 - increased lung weight. No indication of histopathological changes in the upper and central airways.

Non-specific changes in the lower respiratory organs, attributed to the primary irritation potential of the product. No symptoms of organ injury were observed, except in the respiratory organs.

Specific effects

Salmonella/microsome test (Ames test): No indication of mutagenicity.

Substances causing effects

Salmonella/microsome test (Ames test): No indication of mutagenicity.

Aromatic hydrocarbons - such as xylene - irritate the skin and mucous membranes and have narcotic effects when inhaled at high concentrations.

12 ECOLOGICAL INFORMATION

Ecotoxicity

Acute toxicity to fish.

The material is slightly toxic to aquatic organisms on an acute basis (LC_{50}/EC_{50} between 10 and 100 mg/l in the most sensitive species).

- LC_{50}, Pimephales promelas (fathead minnow), flow-through test, 96 h, 193 mg/L

Acute toxicity to aquatic invertebrates.

- LC_{50}, Daphnia magna (water flea), static test, 27 mg/L, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

- EC_{50}b, Pseudokirchneriella subcapitata (green algae), 96 h, biomass, > 662 mg/L, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

- EC_{50}, activated sludge, static test, 40 min, 2,590 mg/L, OECD Test 209

Hazardous to the aquatic environment – Chronic

Chronic toxicity to fish

- NOEC, Pimephales promelas (fathead minnow), flow-through test, 28 d, growth, 83 mg/L

Persistence and degradability

Biodegradability: The material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day window	Biodegradation	Exposure time	Method
Pass	68%	28 d	OECD Test Guideline 301D or Equivalent
Not applicable	66%	50 h	Simulation study

Theoretical Oxygen Demand: 0.38 mg/mg

Photodegradation

- Test type: Half-life (indirect photolysis)
- Sensitizer: Hydroxyl radicals
- Atmospheric half-life: 79-110 d
- Method: Estimated

Bioaccumulative potential

- Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
- Partition coefficient (n-octanol/water) (log pow): 1.25 at 20 °C Measured
- Bioconcentration factor (BCF): 2-40 / fish / measured

Mobility in soil

- Potential for mobility in soil is very high (Koc between 0 and 50).
- Partition coefficient (Koc): 48.6 Estimated

Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

Other adverse effects

This substance is not on the Annex I list of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

13 DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER. All disposal practices must comply with all local, state/municipal and federal laws and regulations. Regulations may vary by location. Waste characterization and compliance with applicable laws are the sole responsibility of the waste generator. Preferably dispose of by co-processing in a cement kiln or by incineration, always with the approval of the local environmental agency.

Treatment and disposal methods for used packaging: Empty containers should be recycled or disposed of through an approved waste management facility. Waste characterization and compliance with applicable laws are the sole responsibility of the waste generator. Do not reuse containers for any purpose.

Contaminated packaging: Containers, even those that have been emptied, can contain vapours. Do not cut, drill, grind, weld or perform similar operations on or near empty containers.

14 TRANSPORT INFORMATION

	Land	Sea	Air
Regulation	According to ANTT (Brazil), Resolution 420/2004	According to IMDG/GGVSee	According to ICAO/IATA-DGR
Proper shipping name	Toxic liquid, organic, N.O.S. (mixture of halogenated solvents)	Toxic liquid, organic, N.O.S. (mixture of halogenated solvents)	Toxic liquid, organic, N.O.S.
UN number	2810	2810	2810
Hazard class	6.1	6.1	6.1
Hazard number	60	60	60
Packing group	III	III	III

ANAC - Agência Nacional de Aviação Civil (Brazilian National Civil Aviation Agency) - Resolution No. 129 of December 8, 2009. RBAC No. 175 - (BRAZILIAN CIVIL AVIATION REGULATION) - TRANSPORT OF DANGEROUS GOODS ON 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 Regulations (DGR).

	Packing instructions	Maximum quantity per package
Cargo aircraft	307	60 litres
Passenger aircraft	305 and Y305	1 litre and 5 litres

15 REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

The customer is advised to check whether, at the place of use of this product, there are specific regulations for human or veterinary applications, such as: food additives or food packaging, pharmaceuticals, household cleaning products or cosmetics, or whether the product is controlled because it is considered a precursor for the manufacture of narcotics, chemical weapons or ammunition. The hazard communication for this product complies with local and international legislation, always observing the most restrictive requirement.

Remarks

Contains precursors for the manufacture of narcotics and controlled substances – check local regulations.

Brazilian legislation: Federal Decree No. 2,657 of July 3, 1998. Law No. 12,305 of August 2, 2010 (National Solid Waste Policy). Decree No. 7,404 of December 23, 2010. Ordinance (Portaria) No. 229 of May 24, 2011 - Amends Regulatory Standard NR 26. Standard ABNT-NBR 14725:2012

16 OTHER INFORMATION

Important information not specifically described in the previous sections: This FISPQ has been prepared based on current knowledge regarding the proper handling of the product and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving its combination with other materials, as well as uses other than those indicated, are the responsibility of the user. Users are warned that handling any chemical substance requires prior knowledge of its hazards. In the workplace, it is the responsibility of the company using the product to train its employees and contractors on the possible risks arising from exposure to the chemical product.

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