SDS: 0018423
Date Prepared: 08/25/2018

SAFETY DATA SHEET

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1. IDENTIFICATION

Product Name:	**EBECRYL® 860 radiation curing resins**
Synonyms:	None
Product Description:	Epoxy acrylate resin
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Intended/Recommended Use:	Coatings & Inks

Allnex USA Inc., 9005 Westside Parkway, Alpharetta, Georgia 30009, USA
For Product and all Non-Emergency Information call your local Allnex contact point or contact us at http://www.allnex.com/contact

EMERGENCY PHONE (24 hours/day) - For emergency only involving spill, leak, fire, exposure or accident call:
+1-866-928-0789 (toll free) or +1-215-207-0061 (Carechem 24 - Allnex29003-NCEC)
See Section 16 for Emergency phone numbers for other regions.

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2. HAZARDS IDENTIFICATION

GHS Classification
Reproductive Toxicant Hazard Category 2
Skin Sensitizer Hazard Category 1B
Aquatic Environment Acute Hazard Category 3

LABEL ELEMENTS

Signal Word
WARNING

Hazard Statements
Suspected of damaging fertility or the unborn child
May cause an allergic skin reaction
Harmful to aquatic life

Precautionary Statements
Obtain special instructions before use.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapours/spray.

Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
IF exposed or concerned: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Specific treatment (see supplemental first aid instructions on this label).
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local and national regulations.

Hazards Not Otherwise Classified (HNOC), Other Hazards
Polymerization may occur from excessive heat, contamination or exposure to direct sunlight.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

Component / CAS No.	%	GHS Classification	Carcinogen
Acrylic acid 79-10-7	< 0.4	Flam. Liq. 3 (H226) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) STOT Single 3 (H335) Skin Corr. 1A (H314) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411)	-
4-Methoxyphenol 150-76-5	< 0.3	Repr. 2 (H361d) Acute Tox. 4 (H302) Skin Irrit. 3 (H316) Eye Irrit. 2A (H319) Skin Sens. 1B (H317) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)	-
Reactive tertiary amine -	3 - 7	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Skin Sens. 1B (H317)	-
Epoxy acrylate -	5 - 10	Skin Sens. 1B (H317)	-

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

4. FIRST AID MEASURES

First-aid Measures

Inhalation:
Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

Skin Contact:
Wash immediately with plenty of water and soap. Remove contaminated clothing and shoes without delay. Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes

before reuse.

Eye Contact:
Rinse immediately with plenty of water for at least 15 minutes. Obtain medical advice if there are persistent symptoms.

Ingestion:
If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Most Important Symptoms and Effects, Acute and Delayed
None known.

Immediate Medical Attention and Special Treatment
In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Notes To Physician:
No specific measures have been identified.

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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Use water spray or fog, carbon dioxide or dry chemical.

Unsuitable Extinguishing Media:
high pressure water jet.

Protective Equipment:
Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See SDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:
Keep containers cool by spraying with water if exposed to fire.

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

Methods For Cleaning Up:
Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush spill area with water.

Environmental Precautions:
Avoid release to the environment.

References to other sections:
See Sections 7, 8 and 13 for additional information.

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7. HANDLING AND STORAGE

HANDLING
Precautions: Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves.

Avoid release to the environment.

Special Handling Statements: Provide good ventilation of working area (local exhaust ventilation if necessary). Avoid excessive heat, contamination or exposure to direct sunlight to prevent polymerization.

STORAGE
Store in a cool, dry, well ventilated place and keep container tightly closed. Keep away from heat sources and direct sunlight.

Storage Temperature: Store at 4 - 40 °C
Reason: Quality.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:
Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure when spraying or curing at elevated temperatures.

Respiratory Protection:
For operations where inhalation exposure can occur use an approved respirator. Recommendations are listed below. Other protective respiratory equipment may be used based on user's own risk assessment.
Recommended respirators include those certified by NIOSH.

Recommended:
Full Face Mask with organic vapor cartridge, Type A filter (BP >65°C)

Eye Protection:
Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

Skin Protection:
Avoid skin contact. Wear impermeable gloves and suitable protective clothing. Barrier creams may be used in conjunction with the gloves to provide additional skin protection.

Hand Protection:
Wear protective gloves. Recommendations are listed below. Other protective materials may be used based on user's own risk assessment. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred. Replace gloves immediately when torn or any change in appearance (dimension, color, flexibility etc.) is noticed.

Gloves for repeated or prolonged exposure - non exhaustive list:
Nitrile rubber (NBR), thickness: > 0.56 mm, break through time: up to 480 min

Gloves for short term exposure/splash protection - non exhaustive list:
Nitrile rubber (NBR), thickness: 0.1 mm, break through time: up to 30 min

The chemical resistance depends on the type of product and amount of product on the glove. Therefore gloves need to be changed when in contact with chemicals.

Not suitable gloves - non exhaustive list:
Latex gloves

Due to many conditions (e.g. temperature, abrasion) the practical usage of a chemical protective glove in practice may be much shorter than the permeation time determined through testing. Use PE gloves as under gloves for difficult situations like for instance: high exposure, unknown composition or unknown properties of the chemicals.

Additional Advice:
Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

Exposure Limit(s)

79-10-7 Acrylic acid

OSHA (PEL):	Not established
ACGIH (TLV):	(skin) 2 ppm (TWA)
Other Value:	1 ppm skin (Allnex)

150-76-5 4-Methoxyphenol

OSHA (PEL):	Not established
ACGIH (TLV):	5 mg/m³ (TWA)
Other Value:	Not established

Biological Exposure Limit(s)

No values have been established.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	clear pale yellow
Appearance:	clear liquid
Odor:	acrylate
Boiling Point:	> 100 °C
Melting Point:	Not available
Vapor Pressure:	< 1.33 hPa @ 20 °C
Specific Gravity/Density:	1.05 g/cm³
Vapor Density:	Not available
Percent Volatile (% by wt.):	< 0.5
pH:	Not available
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not available
Solubility In Water:	slightly soluble
Volatile Organic Content:	Not available
Flash Point:	150 °C Cleveland Open Cup
Flammable Limits (% By Vol):	Not available
Autoignition Temperature:	Not available
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available
Viscosity (Kinematic):	Not available
Viscosity (Dynamic):	Highly viscous liquid
Explosive Properties:	None.
Oxidizing Properties:	Not available

10. STABILITY AND REACTIVITY

Reactivity: No information available

Stability: Stable.

Conditions To Avoid: Avoid direct exposure to sunlight. Avoid temperatures higher than 60°C. Avoid friction with temperature increase as result. Avoid exposure to strong UV sources. Loss of dissolved air. Loss of polymerization inhibitor. Avoid direct contact with

	heat sources.
Polymerization:	May occur
Conditions To Avoid:	Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers. Hazardous polymerization can occur when exposed to direct sunlight. Hazardous exothermic polymerization can occur when heated.
Materials To Avoid:	Reactions with oxidising agents. Polymerization initiators including peroxides, strong oxidizing agents, copper, copper alloys, carbon steel, iron, rust, and strong bases.
Hazardous Decomposition Products:	hydrogen cyanide (HCN) oxides of carbon oxides of nitrogen hydrocarbons

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin, Eyes, Oral.

Acute toxicity - oral: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
Acute toxicity - dermal: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
Acute toxicity - inhalation: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.

Skin corrosion / irritation: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
Serious eye damage / eye irritation: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.

Respiratory sensitization: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
Skin sensitization: May cause an allergic skin reaction

Carcinogenicity: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
Germ cell mutagenicity: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
Reproductive toxicity: Suspected of damaging fertility or the unborn child

Specific target organ toxicity (STOT) - single exposure: Not Classified. **-** Based on available data and/or professional judgment, the classification criteria are not met.
Specific target organ toxicity (STOT) - repeated exposure: Not Classified. **-** Based on available data and/or professional judgment, the classification criteria are not met.

Aspiration hazard: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.

PRODUCT TOXICITY INFORMATION

ACUTE TOXICITY DATA

oral	rat	Acute LD50	> 5000 mg/kg

dermal	rabbit	Acute LD50	> 2000 mg/kg
inhalation	rat	Acute LC50 4 hr	No data

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	Skin	rabbit	mild (tested)
Acute Irritation	eye	rabbit	Not irritating (tested)

ALLERGIC SENSITIZATION

Sensitization	Skin	Sensitizing
Sensitization	respiratory	No data

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay	No data

OTHER INFORMATION

The toxicity data above are the results from Allnex sponsored studies or from the available public literature.
The toxicological properties of this material have not been fully determined.
Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms such as redness, blistering, dermatitis, etc.
The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

11. TOXICOLOGICAL INFORMATION

HAZARDOUS INGREDIENT TOXICITY DATA

Acrylic acid has acute oral (rat) LD50, acute dermal (rabbit) LD50, and acute inhalation (rat, 4-hr, vapor) LC50 values of 617-1405 mg/kg, >2000 mg/kg, and >1730 ppm (>5.1 mg/L), respectively. Direct contact may cause severe eye irritation with corneal injury which may result in permanent impairment of vision and even blindness. Chemical burns may occur. Vapors may also cause severe eye irritation. Skin contact may cause severe skin burns. Symptoms may include pain, severe local redness, swelling, blistering and tissue damage. Inhalation overexposure may cause severe irritation of the respiratory tract. Repeated overexposures may have effects on the kidney. Acrylic acid did not cause cancer when given to rats in their drinking water throughout their lifetime. No skin tumors occurred in mice receiving repeated skin applications of acrylic acid at nonirritating doses. A slight, not statistically significant increase in skin tumors reported in another study is difficult to interpret due to the low incidence and conflicting information regarding dose. This substance has been toxic to the fetus in laboratory animals at doses toxic to the mother but has not been found to cause birth defects in laboratory animals. In laboratory animal studies with acrylic acid, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. The results of in vitro genetic toxicity studies are predominantly negative. Animal genetic toxicity studies are negative (not mutagenic).

4-Methoxyphenol has an oral LD50 of 1630 mg/Kg (rat), and a dermal LD50 of > 2000 mg/Kg (rat). Suspect skin sensitizer (guinea pig). 4-Methoxyphenol is a moderate to severe eye irritant and a slight skin irritant. Ingestion causes gastrointestinal irritation with nausea and vomiting and possibly ulceration. Overexposure (ingestion/inhalation) can cause methemoglobinemia with cyanosis, as well as central nervous system (CNS) depression, with symptoms ranging from headache, and confusion, to coma, and respiratory failure. 4-Methoxyphenol may be absorbed through skin, causing symptoms similar to ingestion/inhalation exposure routes. In vitro testing hasn't revealed genotoxic effects. This was confirmed by an in vivo clastogenicity study. No increase in tumour incidence was observed in several carcinogenicity assays. 4-Methoxyphenol has induced teratogenic effects in oral (gavage) prenatal toxicity studies.

Reactive tertiary amine has acute oral (rat) LD50 and acute dermal (rat) LD50 values of > 2000 mg/kg. Direct contact with this material may cause moderate eye and skin irritation. The substance was found to be a skin sensitizer in the mouse local lymph node assay. Based on the results of in vitro and in vivo testing, the substance is not considered to be genotoxic. It did not reveal any toxicity potential on fertility and development at dose levels up to 1000 mg/kg bw/day.

The toxicological properties of epoxy acrylate have not been fully investigated. The LD50 oral (rat) and LD 50 dermal (rabbit) are estimated to be > 2000 mg/kg and > 2000 mg/kg, respectively. It is not expected to cause eye or skin irritation. Repeated or prolonged skin contact may cause allergic skin reactions.

WARNING: Reproductive Harm – www.P65Warnings.ca.gov

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12. ECOLOGICAL INFORMATION

TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

Overall Environmental Toxicity: Harmful to aquatic life.

The ecological assessment for this material is based on an evaluation of its components.

RESULTS OF PBT AND vPvB ASSESSMENT
Not determined

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Fish
Acrylic acid (79-10-7)	LC50 = 222 mg/L - Brachydanio rerio (96h)
4-Methoxyphenol (150-76-5)	LC50 = 28.5 mg/L - Oncorhynchus mykiss (96hrs) LC50 = 84.3 mg/L - Pimephales promelas (96hrs)
Reactive tertiary amine (-)	LC50 = >100 mg/l - Brachydanio rerio (96h)
Epoxy acrylate (-)	Not available

Component / CAS No.	Toxicity to Water Flea
Acrylic acid (79-10-7)	EC50 = 95 mg/L - Daphnia magna (48h) LC50 = 270 mg/L - Daphnia magna (24h)
4-Methoxyphenol (150-76-5)	EC50 = 3 mg/L - Daphnia magna (48hrs) NOEC = 1.32 mg/L - Daphnia magna (48hrs)
Reactive tertiary amine (-)	EC50 = >100 mg/l - Daphnia magna (48h)
Epoxy acrylate (-)	Not available

Component / CAS No.	Toxicity to Algae
Acrylic acid (79-10-7)	EC50 = 0.17 mg/L - Pseudokirchneriella subcapitata (96h) EC50 = 0.04 mg/L - Desmodesmus subspicatus (72h)
4-Methoxyphenol (150-76-5)	EC50 = 54.7 mg/L - Pseudokirchnerella subcapitata (72hrs)
Reactive tertiary amine (-)	NOEC = 12.5 mg/l - Desmodesmus subspicatus (72h) LOEC= 25 mg/l - Desmodesmus subspicatus (72h)

Epoxy acrylate (-)	Not available

Component / CAS No.	Partition coefficient
Acrylic acid (79-10-7)	0.38 - 0.46
4-Methoxyphenol (150-76-5)	1.3
Reactive tertiary amine (-)	Not available
Epoxy acrylate (-)	Not available

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this SDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this SDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Dangerous Goods? Not applicable/Not regulated

TRANSPORT CANADA

Dangerous Goods? Not applicable/Not regulated

ICAO / IATA

Dangerous Goods? Not applicable/Not regulated

IMO

Dangerous Goods? Not applicable/Not regulated

SPECIAL PRECAUTIONS FOR USER
Protect from freezing and protect against external heat sources above +40°C/104°F.

15. REGULATORY INFORMATION

Inventory Information

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Economic Area (including EU): When purchased from an Allnex legal entity based in the EEA (EU or Norway), this product is compliant with the registration of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt and/or registered.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

New Zealand: This product is approved or exempt under the Hazardous Substances and New Organisms (HSNO) Act.

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Japan: All components of this product are included on the Japanese (ENCS and ISHL) inventories or are not required to be listed on the Japanese inventories.

Korea: One or more components of this product are NOT included on the Korean (ECL) inventory.

Philippines: One or more components of this product are NOT included on the Philippine (PICCS) inventory.

Taiwan: All components of this product are included in the Taiwan chemical substance inventory or are not required to be listed on the Taiwan chemical substance inventory (TCSI).

Switzerland: All components of this product are exempt from the new substance notification requirements for Switzerland (SR 813.11 art. 24-26).

OTHER ENVIRONMENTAL INFORMATION
The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

This product does not contain any components regulated under these sections of the EPA

PRODUCT HAZARD CATEGORY UNDER SECTIONS 311 AND 312 OF EPCRA

Physical Hazards
Not applicable

Health Hazards
Reproductive toxicity
Respiratory or Skin Sensitization

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16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)
Health: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

Fire: 1 - Materials that must be preheated before ignition can occur.

Instability: 1 - Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures.

Reasons For Issue: Revised Section 11

Date Prepared: 08/25/2018
Date of last significant revision: 10/10/2016

Component - Hazard Statements
Acrylic acid
H226 - Flammable liquid and vapor.
H302 - Harmful if swallowed.
H312 - Harmful in contact with skin.
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.
H332 - Harmful if inhaled.
H335 - May cause respiratory irritation.
H400 - Very toxic to aquatic life.
H411 - Toxic to aquatic life with long lasting effects.
4-Methoxyphenol
H302 - Harmful if swallowed.
H316 - Causes mild skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H361d - Suspected of damaging the unborn child.
H401 - Toxic to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.
Reactive tertiary amine
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H317 - May cause an allergic skin reaction.
Epoxy acrylate
H317 - May cause an allergic skin reaction.

Emergency phone numbers for other regions

Asia Pacific
Australia: +61 1800 022 037 (Allnex Australia)
China (PRC): +86(0)25 8547 7110 (Jiangsu registration center) / +86(0)532 8388 9090 (NRCC)
India: 000 800 100 7479 (toll free) or +65 3158 1198 (Carechem 24)
Indonesia: 007 803 011 0293 (Carechem 24)
Japan: +81 345 789 341 (Carechem 24)
Korea: +82 2 3479 8401 (Carechem 24)
Malaysia: +60 3 6207 4347 (Carechem 24)
New Zealand: +64 0800 803 002 (Allnex New Zealand)
Philippines: +63 2 231 2149 (Carechem 24)
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Vietnam: +84 8 4458 2388 (Carechem 24)
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Middle East, Africa
+44 (0) 1235 239 671 (Carechem 24)
Latin America
Brazil: +55-800-707-7022 (toll free) or +55-11-98149-0850 (Suatrans 24)
Chile: +56 2 2582 9336 (Carechem 24)
Mexico and all others: +52-555-004-8763 (Carechem 24)

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