SDS: 0055775
Date Prepared: 12/13/2022

SAFETY DATA SHEET

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1. IDENTIFICATION

Product Name:	**CYMEL® NF 3041 CROSSLINKING AGENT**
Synonyms:	None
Product Description:	Modified urea resin
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Intended/Recommended Use:	Crosslinking agent

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
Flammable Liquids Hazard Category 3
Acute Toxicity (Oral) Hazard Category 4
Specific Target Organ Toxicity - Single Exposure Hazard Category 3
Skin Corrosion / Irritation Hazard Category 2
Serious Eye Damage / Eye Irritation Hazard Category 1

LABEL ELEMENTS

Signal Word
DANGER

Hazard Statements
Flammable liquid and vapor
Harmful if swallowed
May cause drowsiness or dizziness
May cause respiratory irritation
Causes skin irritation
Causes serious eye damage

Precautionary Statements

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash face, hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use CO2, dry chemical, or foam to extinguish.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Specific treatment (see supplemental first aid instructions on this label).
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Store in a well-ventilated place. Keep cool.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/container in accordance with local and national regulations.

Hazards Not Otherwise Classified (HNOC), Other Hazards
Not applicable

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3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

Component / CAS No.	%	GHS Classification
Butanol 71-36-3	34 - 38	Flam. Liq. 3 (H226) Acute Tox. 4 (H302) STOT SE 3 (H335) STOT SE 3 (H336) Skin Irrit. 2 (H315) Eye Dam. 1 (H318)
Glyoxal 107-22-2	0 - 0.95	Muta. 2 (H341) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) 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.

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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:
Remove contaminated clothing and shoes without delay. Wash immediately with plenty of water. Do not reuse contaminated clothing without laundering. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.

Eye Contact:
Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.

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
Not applicable.

Notes To Physician:
No specific measures have been identified.

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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Use water spray, alcohol foam, carbon dioxide or dry chemical to extinguish fires. Water stream may be ineffective.

Unsuitable Extinguishing Media:
full 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. Remove sources of ignition.

Environmental Precautions:
None known.

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

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7. HANDLING AND STORAGE

HANDLING

Precautions: Keep away from heat, sparks and open flame. - No smoking. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting and other equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves and eye/face protection. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid breathing vapors or spray mist.

Special Handling Statements: Provide good ventilation of working area (local exhaust ventilation if necessary). During processing and handling of the product, comply with the indicative occupational exposure limit values. Containers must be bonded and grounded when pouring or transferring material.

STORAGE

Store in a cool, dry, well ventilated place and keep container tightly closed. Areas containing this material should have fire safe practices and electrical equipment in accordance with applicable regulations and/or guidelines. Standards are primarily based on the material`s flashpoint, but may also take into account properties such as miscibility with water or toxicity. All local and national regulations should be followed.
In the Americas, National Fire Protection Association (NFPA) 30: Flammable and Combustible Liquids Code, is a widely used standard. NFPA 30 establishes storage conditions for the following classes of materials: Class I Flammable Liquids, Flashpoint <37.8 °C. Class II Combustible Liquids, 37.8 °C < Flashpoint <60 °C. Class IIIa Combustible Liquids, 60 °C < Flashpoint < 93 °C. Class IIIb Combustible Liquids, Flashpoint > 93 °C. Keep away from sources of ignition - refrain from smoking. Avoid flammable gas mixtures. Take precautionary measures against electrostatic loading - earthing necessary during loading operations. Vapours may form explosive mixtures with air.

Storage Temperature: Store at 5 - 30 °C 41 - 86 °F
Reason: Quality.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:
Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

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:
Prevent eye and skin contact. Provide eye wash fountain and safety shower in close proximity to points of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

Skin Protection:
Prevent contamination of skin or clothing when removing protective equipment. Wear impermeable gloves and suitable protective clothing.

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: > 0.38 mm, break through time: > 480 min

Gloves for short term exposure/splash protection - non exhaustive list:
Nitrile rubber (NBR), thickness: 0.12 mm, break through time: up to 60 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:
Natural rubber (NRL), thickness: 0.12 mm

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:
Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. It is recommended that a shower be taken after completion of workshift especially if significant contact has occurred. Work clothing should then be laundered prior to reuse. Street clothing should be stored separately from work clothing and protective equipment. Work clothing and shoes should not be taken home.

Exposure Limit(s)

71-36-3 Butanol

OSHA (PEL):	100 ppm (TWA)
	300 mg/m³ (TWA)
ACGIH (TLV):	20 ppm (TWA)
Other Value:	Not established

107-22-2 Glyoxal

OSHA (PEL):	Not established
ACGIH (TLV):	0.1 mg/m³ inhalable fraction and vapor (TWA)
Other Value:	Not established

Biological Exposure Limit(s)

No values have been established.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	colorless to straw yellow
Appearance:	liquid
Odor:	organic solvent
Boiling Point:	117.7 °C 244 °F (value for butanol)
Melting Point:	Not applicable
Vapor Pressure:	Not available
Specific Gravity/Density:	0.99 - 1.01 g/cm³
Vapor Density:	Not available
Percent Volatile (% by wt.):	34 - 38
pH:	5.0 - 7.5 (1:1 in water)
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not available
Solubility In Water:	Not available
Volatile Organic Content:	Not available
Flash Point:	36 - 38 °C 97 - 100 °F Pensky-Martens Closed 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):	Not available
Flammability:	Not available
Oxidizing Properties:	No

10. STABILITY AND REACTIVITY

Reactivity:	No information available
Stability:	Stable.
Conditions To Avoid:	Prolonged storage above 37.8 C (100 F). Elevated temperatures will cause material to slowly polymerize. Product will gel upon extended storage.
Polymerization:	Will not occur
Conditions To Avoid:	None known
Materials To Avoid:	None known
Hazardous Decomposition Products:	oxides of carbon oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Oral, Skin, Eyes, Respiratory System.

Acute toxicity - oral: Harmful if swallowed
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: Causes skin irritation
Serious eye damage / eye irritation: Causes serious eye damage

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

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

Specific target organ toxicity (STOT) - single exposure: May cause drowsiness or dizziness. May cause respiratory irritation.
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		1751 mg/kg
dermal	rabbit	Acute LD50		> 2000 mg/kg
Inhalation	rat	Acute LC50	4 hr	> 5 mg/l (Dust/Mist)

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	dermal	Irritating
Acute Irritation	eye	Causes serious damage

ALLERGIC SENSITIZATION

Sensitization	Skin	No data
Sensitization	respiratory	No data

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay	No data

OTHER INFORMATION

The product toxicity information above has been estimated.

HAZARDOUS INGREDIENT TOXICITY DATA

Butanol has acute oral (rat) and dermal (rabbit) LD50 values of 0.790 g/kg and 3.4 g/kg, respectively. The inhalation LC50 (rat) value after a 4-hour exposure is 8000 ppm (24.24 mg/L). Acute overexposure to vapors of butanol may cause headache, dizziness, drowsiness, blurred vision and a burning sensation in the eyes. Overexposure to butanol vapors can produce headache and central nervous system depression. Acute ingestion of butanol has caused unconsciousness and coma. Direct contact with butanol may cause severe eye irritation and moderate skin irritation. Butanol has caused effects on the developing embryo/fetus in the presences of material toxicity.

Glyoxal (40% aqueous solution) has an acute oral (rat), acute dermal (rabbit) LD50 and 7-hour inhalation (rat) LC50 values of 3.08 mL/kg, 5.0 mL/kg, and >10.5 mg/L respectively. Glyoxal produced mild skin and mild eye irritation during studies with rabbits. Repeated skin contact with solutions of 1.25% glyoxal or greater may cause allergic skin reactions. In 90 day feeding studies, there was no treatment-related microscopic pathology in rats fed 0.03125, 0.0625, 0.125 and 0.25 g/kg/day, and dogs fed 0.031, 0.065 and 0.115 g/kg/day. The NOEL was 0.125 g/kg/day. Glyoxal produced mixed results in bacterial and other in vitro genotoxicity tests. It was positive in the Ames test, the Mammalian Cell Forward Gene Mutation assay and Sister Chromatid Exchange test in CHO cells and in the Rat Hepatocyte Primary Culture DNA Repair test. Glyoxal was not active in the Cell Transformation assay, and was not genotoxic in whole animal tests, the mouse micronucleus test and the Drosophila Sex-Linked Recessive Lethal assay. No skin tumors were found in male mice treated three times per week for their lifetimes with 25 ul of 1:8 dilutions of 40% glyoxal in deionized water.

WARNING: Cancer and 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

This material is not classified as dangerous for the environment.
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
Butanol (71-36-3)	LC50 100000 - 500000 µg/L - Lepomis macrochirus (96h) LC50 = 1740 mg/L - Pimephales promelas (96h)
Glyoxal (107-22-2)	LC50 = 215 mg/L - Pimephales promelas (96h)

Component / CAS No.	Toxicity to Water Flea
Butanol (71-36-3)	EC50 = 1983 mg/L - Daphnia magna (48h)
Glyoxal (107-22-2)	EC50 = 404 mg/L - Daphnia magna (48h)

Component / CAS No.	Toxicity to Algae
Butanol (71-36-3)	EC50 > 500 mg/L - Desmodesmus subspicatus (72h)
Glyoxal (107-22-2)	EC50 > 500 mg/L - Desmodesmus subspicatus (72h) EC50 > 500 mg/L - Desmodesmus subspicatus (96h) EC50 <= 348.59 mg/L - Pseudokirchneriella subcapitata (96h)

Component / CAS No.	Partition coefficient
Butanol (71-36-3)	1
Glyoxal (107-22-2)	-1 -1.15 -1.62

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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? X
PROPER SHIPPING NAME: RESIN SOLUTION
Hazard Class: 3
Packing Group: III
UN/ID Number: UN1866
Transport Label Required: Flammable Liquid

Component / CAS No.	Hazardous Substances/Reportable Quantity of Product (lbs)
Butanol	13157

Comments: Hazardous Substances/Reportable Quantities - DOT requirements specific to Hazardous Substances only apply if the quantity in one package equals or exceeds the product reportable quantity.

TRANSPORT CANADA

Dangerous Goods? X
PROPER SHIPPING NAME: RESIN SOLUTION
Hazard Class: 3
Packing Group: III
UN Number: UN1866
Transport Label Required: Flammable Liquid

ICAO / IATA

Dangerous Goods? X
UN PROPER SHIPPING NAME: RESIN SOLUTION
Transport Hazard Class: 3
Packing Group: III
UN Number: UN1866
Transport Label Required: Flammable Liquid

IMO

Dangerous Goods? X
UN PROPER SHIPPING NAME: RESIN SOLUTION
Transport Hazard Class: 3
UN Number: UN1866
Packing Group: III
Transport Label Required: Flammable Liquid

15. REGULATORY INFORMATION

Inventory Information

United States (USA): All components of this product are designated as “Active” on the TSCA Inventory or are not required to be listed.

The final product contains a component exempt from the requirement of listing on the TSCA Inventory under the provisions of the Polymer Exemption, 40 CFR 723.250.

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 and shipped 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: The final product contains a PLC (Polymer of Low Concern), which is exempt from notification in Australia as set forth by the Industrial Chemicals Bill 2017 (IC Bill). Introducers (importers and manufacturers) need to comply with annual reporting and record-keeping requirements.

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

China: One or more components of this product are NOT included on the Chinese (IECSC) inventory. The company has obtained the required notification approvals from the Ministry of Environmental Protection (MEP) as per the "Environmental Administrative Measures for New Chemical Substance" for the component(s) not listed in the Chinese Inventory (IECSC). The product can be imported/manufactured in China ONLY under specific conditions.

Japan: One or more components of this product are NOT included on the Japanese (ENCS and/or ISHL) 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).

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.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Butanol 71-36-3	34 - 38	None	5000	Yes	No

PRODUCT HAZARD CATEGORY UNDER SECTIONS 311 AND 312 OF EPCRA

Physical Hazards
Flammable (gases, aerosols, liquids, or solids)

Health Hazards
Acute toxicity (any route of exposure)
Skin Corrosion or Irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

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16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)
Health: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

Fire: 3 - Liquids and solids that can be ignited under almost all ambient temperature conditions.

Instability: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons for Issue: Revised Section 15

Date Prepared: 12/13/2022
Date of last significant revision: 12/13/2022

Component - Hazard Statements
Butanol
H226 - Flammable liquid and vapor.
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H336 - May cause drowsiness or dizziness.
Glyoxal
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H341 - Suspected of causing genetic defects.

Emergency phone numbers for other regions

Asia Pacific
Australia: +61 1800 022 037 (Allnex Australia)
China (PRC): +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: 0120 015 230 (toll free) (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)
Taiwan: +886 2 8793 3212 (Carechem 24)
Vietnam: +84 8 4458 2388 (Carechem 24)
All Others: +65 3158 1074 (Carechem 24)
Europe
+44 (0) 1235 239 670 (Carechem 24)
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)