



SAFETY DATA SHEET

DOW AGROSCIENCES LLC

Product name: X12407521

Issue Date: 08/19/2020

Print Date: 08/20/2020

RESEARCH SAMPLE.

DOW AGROSCIENCES LLC encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.

1. IDENTIFICATION

Product name: X12407521

Recommended use of the chemical and restrictions on use

Identified uses: Research sample.

COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS, IN, 46268-1053
UNITED STATES

Customer Information Number : 800-992-5994
E-mail address : customerinformation@corteva.com

EMERGENCY TELEPHONE
24-Hour Emergency Contact : 800-992-5994
Local Emergency Contact : 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin irritation - Category 2

Eye irritation - Category 2A

Specific target organ toxicity - single exposure - Category 3

Label elements

Hazard pictograms



4. FIRST AID MEASURES

Description of first aid measures

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Contaminated leather items such as shoes should be disposed of properly.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel. Never administer anything by mouth if a victim is losing consciousness, is unconscious or is convulsing. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Carbon dioxide fire extinguishers. Foam. Dry chemical fire extinguishers.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

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 of varying composition which may be toxic and/or irritating. Carbon oxides Nitrogen oxides (NOx) Sulphur oxides

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use chemical protective clothing resistant to this material, when there is any possibility of skin contact.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2 (meeting standard EN 14387).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Solid
Color	White
Odor	No data available
Odor Threshold	No data available
pH	No data available
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	No data available
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No relevant data found.

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

No relevant data found.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

COMPONENTS INFLUENCING TOXICOLOGY:**X12407521****Acute oral toxicity**

Single dose oral LD50 has not been determined.

Acute dermal toxicity

The dermal LD50 has not been determined.

Acute inhalation toxicity

The LC50 has not been determined.

12. ECOLOGICAL INFORMATION*Ecotoxicological information appears in this section when such data is available.***Toxicity****X12407521****Acute toxicity to fish**

No relevant data found.

Persistence and degradability**X12407521****Biodegradability:** No relevant data found.**Bioaccumulative potential****X12407521****Bioaccumulation:** No relevant data found.**Mobility in soil**

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

United States TSCA Inventory (TSCA)

This product contains at least one component that is not listed (and is not excluded from listing) on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory, and therefore can be used only for research and development purposes under the conditions described in the Code of Federal Regulations at 40 CFR 720.36.

16. OTHER INFORMATION

Revision

Identification Number: / Issue Date: 08/19/2020 / Version: 0.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); EC_x - Concentration associated with x% response; EHS - Extremely Hazardous Substance; EL_x - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErC_x - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC₅₀ - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC₅₀ - Lethal Concentration to 50 % of a test population; LD₅₀ - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA -

Corteva Agriscience Test Substance Distribution Certificate

Sample Name: XDE-521 **Lot ID:** 82443789
Source Cntr Barcode ID: 21479 **TSN:**
Decant Cntr Barcode ID(s): SP2WDR **Recertification Date:** 31-Oct-2024
Sample Use: TGAI-Tox **GLP Status:** Certified
Storage Location: Indy - GLP - Ambient
Storage Condition: Ambient
Physical State: off white solid
Location Comments:
Parent Compound(s): AUXINS, XDE-521
Recipient: Vitold Glinski
Date Requested: 12-May-2022
Total Amount Requested: 2.000 kg

Destination: Planta Analytica
Planta Analytica LLC
461 Danbury Road
Suite 10
New Milford, CT 06776
UNITED STATES
860-799-5356

From Test Substance Coordinator

Balance ID:

Sampled By:

Recipient:

ICS469-1

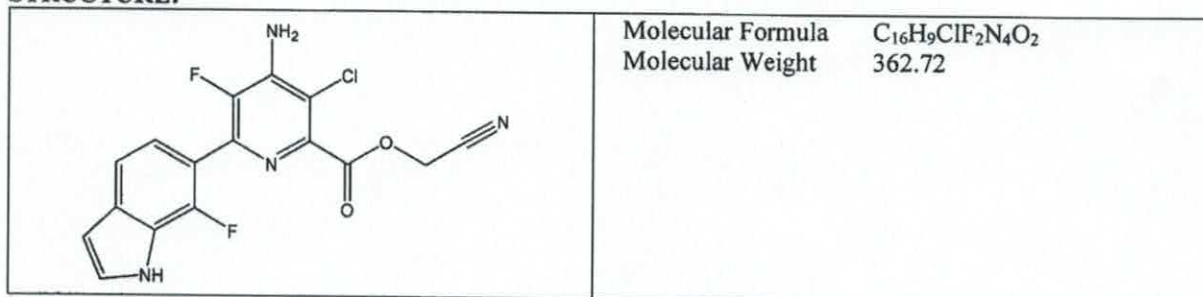
Sarah Nburu 18 May 2022

CERTIFICATE OF ANALYSIS FOR TEST/REFERENCE/CONTROL SUBSTANCES

TITLE OBJECTIVE: Determination of purity and/or identity of the following test/reference/control substance for use in a study.

TEST/REFERENCE/CONTROL SUBSTANCE:

LOT IDENTIFIER:	82443789
LOT NUMBER:	ENBK-176682-021
MATERIAL ID:	X12407521; XDE-521
SAMPLE USE:	Technical Grade Active Ingredient - TOX

STRUCTURE:

CHEMICAL NAME: cyanomethyl 4-amino-3-chloro-5-fluoro-6-(7-fluoro-1H-indol-6-yl)pyridine-2-carboxylate

REFERENCE SUBSTANCE(S) USED: See Page 2 **PURITY:** See Page 2

INITIATION DATE: 26-Jan-2022

METHODS USED:

PURITY: HPLC, GC, Karl Fischer, IC, ICP-OES	IDENTIFICATION: IR, MS, NMR: ¹³ C and ¹ H
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RESULTS and CONCLUSIONS:

INITIAL DETERMINATION:

94.0 wt% XDE-521

IDENTITY:

Spectroscopic analysis is consistent with proposed structure.

OTHER:

Water: 0.08%, 18 impurities detected ≥ 0.06 wt%, Mass balance: 99%, Total metals and ions: 0.30 wt%

RE-CERTIFICATION DATE: 31-Oct-2024

CALCULATIONS:

Area Normalized: N/A

Internal Standard: X

External Standard: X

Other (explain): N/A

STUDY DIRECTOR SIGNATURE:

Hillary Wozniak
Hillary Wozniak

STUDY COMPLETION DATE:

14 April 2022

PEER REVIEWER SIGNATURE:

[Signature]

DATE:

14 Apr 2022

Sponsor and Testing Facility Address:

Corteva Agriscience LLC
9330 Zionsville Road
Indianapolis, IN 46268

All raw data associated with this study will be archived in the testing facility archive and a portion of the sample will be retained. Only descriptive statistics were used unless otherwise noted in the results. This study was conducted in accordance with the Good Laboratory Practice Standard, 40 CFR Part 160.135 (b), except the use of three low-risk, non-validated systems: a Perkin Elmer FT-IR, a Bruker NMR Spectrometer, an Agilent 7890 GC with an Agilent 5975 MSD, for data collection. The systems have undergone vendor installation and qualification testing but not a full Corteva Agriscience CSV. Thus, the use of these systems did not negatively impact the study outcomes. IC and ICP-OES analysis were conducted under non-GLP conditions. This has no impact on the study. Reference substances lot SHBK6446 and lot 213534 were obtained from a commercial supplier and the GLP status is unknown. This has no impact on the study.

REPORT NUMBER

FAPC22-000073

Reference Substance Used:	Purity:	Reported Result in 82443789:
TSN402533	99.7%	94.0%
Lot SHBK6446	99.3%	0.52%
Lot 213534	99.9%	0.39%

Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US

Revision
Identification Number: 0012407521/Version: 0.0
Most recent revision(s) are noted by the bold, double line in the table through the document.
Full text of other abbreviations:
AIC - Australian Inventory of Chemical Substances; AIC - Australian Inventory of Industrial Chemicals;
ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation and Liability Act; CMR - Campaigner, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardization; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; Et x - Lethal rate associated with x% response; Ems - Emergency Schedule; EHS - Existing and New Chemical Substances (Japan); ECx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMTS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk; ICG - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; ICGC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; IRL - Industrial Safety and Health Law (Japan); ISO - International Organization for Standardization; KEQI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NEPA - National Environmental Protection Act; NO(A)/EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOEL - No Observable Effect Concentration; NTP - National Toxicology Program; NZIC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPRD - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA -

X12407521

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION**DOT**

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

**Transport in bulk
according to Annex I or II
of MARPOL 73/78 and the
IBC or IGC Code**

Not regulated for transport
Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Skin corrosion or irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

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

Possibility of hazardous reactions: Not likely to occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight or ultraviolet sources.

Incompatible materials: Strong acids Strong bases. Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Carbon oxides Nitrogen oxides (NOx) Sulphur oxides

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. As product: Single dose oral LD50 has not been determined.

Acute dermal toxicity

Prolonged or widespread skin contact may result in absorption of potentially harmful amounts. As product: The dermal LD50 has not been determined.

Acute inhalation toxicity

Prolonged excessive exposure may cause adverse effects. As product: The LC50 has not been determined.

Skin corrosion/irritation

Brief contact may cause severe skin irritation with pain and local redness.

Serious eye damage/eye irritation

May cause severe eye irritation.
May cause slight corneal injury.

Sensitization

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. If protective equipment is not available or not used, fight fire from a protected location or safe distance. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Small spills: Contain spilled material if possible. Collect in suitable and properly labeled containers. Large spills: Contact the company for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Do not swallow. Avoid contact with skin, eyes and clothing. Avoid breathing vapor, dust or mist. Wash thoroughly after handling. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Do not store near food, foodstuffs, drugs or potable water supplies. Store in a cool and dry place. Store in original container. Keep container tightly closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). Where contact with the liquid is likely, chemical goggles are recommended.

Skin protection

Hand protection: Use gloves chemically resistant to this material. 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

SAFETY DATA SHEET



Signal Word: **WARNING!**

Hazards

- Causes skin irritation.
- Causes serious eye irritation.
- May cause respiratory irritation.

Precautionary statements

Prevention

- Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- Wash skin thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/ eye protection/ face protection.

Response

- IF ON SKIN: Wash with plenty of soap and water.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If skin irritation occurs: Get medical advice/ attention.
- If eye irritation persists: Get medical advice/ attention.
- Take off contaminated clothing and wash before reuse.

Storage

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

Disposal

- Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No data available

Further information

The values listed below represent the percentages of ingredients of unknown toxicity.
 The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 100 %
 The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 100 %

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: X12407521

This product is a substance.

Component	CASRN	Concentration
X12407521	Not available	100.0%

