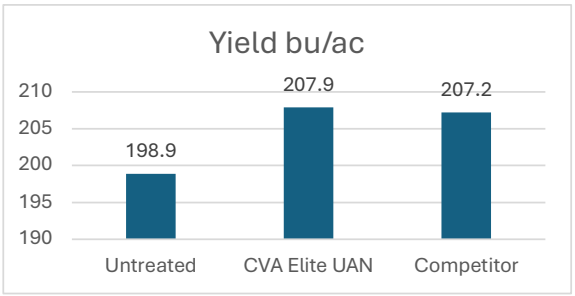
PROTECT UAN

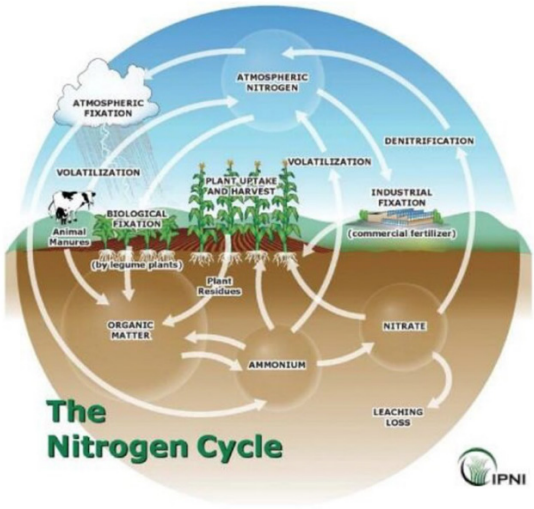
35% NBPT/DCD/VLS Polymer Blend



Trials in Nebraska, Iowa and South Dakota in 2020

Features and Benefits

- The VLS XChain® technology and solvent system chemically bond to NBPT and DCD, protecting them from heat, moisture, and microbial degradation, then gradually release them in the soil for extended nitrogen protection
- NBPT is a urease inhibitor proven to control ammonia volatilization
- DCD (Dicyandiamide) is a nitrification inhibitor that slows the activity of the Nitrosomonas bacteria, preventing the release of nitrogen in available forms that are prone to leaching and denitrification.
- This unique patented technology protects NBPT with the VLS XChain® technology to allow for a low use rate and less chemical load to the soil.
- CVA Elite Protect UAN is an Enhanced Efficiency Fertilizer product that contains active ingredients that are recognized in conservation and watershed programs.



Use Rate	Directions
1.0 -1.5 qts/ton	*In-Season applications only (side-dress or fertigation) when the rate is less than 50% of total crop need*
1.5 -2.0 qts/ton	*Pre-Season applications (Broadcast surface) or side-dress or fertigation applications when the rate is greater than 50% of total crop need*
2.0 - 2.5 qts/ton	*All fall season applications*

Central Valley Ag
2803 N Nebraska
York, NE 68467-0429

ELITE PROTECT UAN

CVA ELITE PROTECT UAN is a volatilization and nitrification inhibitor with multiple modes of action that manages and protects liquid UAN nitrogen fertilizers from potential loss. CVA ELITE PROTECT UAN is used to delay the nitrification of ammoniacal and urea nitrogen fertilizers by inhibiting the oxidation of ammoniacal nitrogen to nitrate nitrogen when UAN solutions are placed at or below the soil surface. CVA ELITE PROTECT UAN is used as a urease inhibitor by its ability to impede the hydrolysis of urea when urea is placed at or near the soil surface. Multiple components found in CVA ELITE PROTECT UAN include a proven polymer technology known to increase Nutrient Use Efficiency (NUE).

GUARANTEED ANALYSIS

NON-PLANT FOOD INGREDIENTS

Active Ingredient:

5% ..... N-(n-butyl) thiophosphoric triamide (NBPT)

20% ..... Dicyandiamide (DCD)

Other Ingredients:

75% ..... Solvent and co-polymer blend

NOT RECOMMENDED FOR USE AS A FERTILIZER SUBSTITUTE.

DANGER

Causes severe skin burns and eye damage. Suspected of causing cancer. May damage fertility or the unborn child.

PRECAUTIONARY STATEMENTS

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Immediately call a poison center or doctor/physician.

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.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Store locked up. Dispose of contents/container to an approved waste disposal plant.

GENERAL INFORMATION

CVA ELITE PROTECT UAN works best when thoroughly mixed with liquid UAN nitrogen fertilizers that are to be applied to the soil.

Nitrogen fertilizer mixed (in liquid fertilizer) with CVA ELITE PROTECT UAN should be applied to the soil in the same manner as nitrogen fertilizers without CVA ELITE PROTECT UAN.

NOTE: When using CVA ELITE PROTECT UAN, if different farming methods from those normally used are tried, test strips are recommended until such new methods have been proven to be effective.

SOIL TYPES AND CROPS

CVA ELITE PROTECT UAN may be used with any crop and in any soil type whereas best management practices recommend the use of various nitrogen fertilizers available.

CVA ELITE PROTECT UAN can be used for corn, cotton, canola, rice, small grains, sorghum, and wheat where a volatilization, urease, and/or nitrification inhibitor are deemed beneficial, and the nitrogen fertilizer is placed on or below the soil surface.

MIXING INSTRUCTIONS

The quality and composition of nitrogen fertilizers varies greatly. Before evenly blending CVA ELITE PROTECT UAN with nitrogen fertilizers, those fertilizers should be "batch tested" to determine compatibility with CVA ELITE PROTECT UAN. CVA ELITE PROTECT UAN may not be compatible with other fertilizer additives. It is recommended that a jar test be conducted, mixing the additives at the same ratios as to be field applied. "316" stainless steel pumps and attachments are recommended. When seals are used, seals made of fluoro-elastomeric materials such as GORE-TEX®, TEFLON® or VITON® are required.

FOR MIXING WITH UREA-AMMONIUM NITRATE (UAN) SOLUTIONS

Follow general industry suggestions for mixing by filling the sprayer or tender tank approximately half full of a urea ammonium nitrate (UAN) fertilizer and begin the agitation system. Then add the appropriate amount of CVA ELITE PROTECT UAN to the tank followed by any additional UAN needed to complete the batch.

TREATMENT RATE

Thoroughly blend CVA ELITE PROTECT UAN in liquid UAN fertilizer at rates of *1.0-2.5 quarts CVA ELITE PROTECT UAN per ton.

*1.0 qt per ton application is for IN-SEASON applications only (top dress, side dress, or fertigation).

USE PRECAUTIONS

KEEP OUT OF THE REACH OF CHILDREN

Do not use CVA ELITE PROTECT UAN as a seed treatment. CVA ELITE PROTECT UAN can be used as a fertilizer additive for in-furrow planting. CVA ELITE PROTECT UAN may not be compatible with other fertilizer additives. It is recommended that a jar test be conducted, mixing at the same ratios as to be field applied. Read the SDS and label before use, including but not limited to "USE PRECAUTIONS" and "Warranty". Always wear proper personal protection and follow instructions for treatment and application. Use according to label directions.

Do not contaminate waterways and sewers during cleaning of equipment or disposal of wastes, always adhering to applicable provisions of federal, state, and local laws and regulations. Completely empty contents into application equipment. Dispose of empty container by depositing in sanitary landfills, or as required by law. Do not reuse containers. Observe all warnings on label. Read the Safety Data Sheet prior to use.

STORAGE, HANDLING AND DISPOSAL

Avoid exposure – use care in handling/storage/disposal activities. Always wear appropriate chemical mixing personal protective equipment (PPE) including eye/face and hand protection. Keep containers tightly closed in a dry, cool, and well-ventilated place that meet or exceed governmental regulation guidelines. Keep product from prolonged freezing conditions. Store at temperatures between 20°F and 100°F. If the product is subjected to temperatures below 20°F for a prolonged period, the product should be moved to conditions above freezing and agitated for 30 minutes after it is warm and again prior to use. At this point, the product will return to its normal liquid state and may be used normally. No degradation of active ingredient will occur with the product that has been frozen. Avoid storage in high temperatures. Once a container is opened it is recommended to utilize its contents within thirty days.

Dispose of empty containers according to federal, state, and local regulations.

Contact your Central Valley Ag representative with any questions on storage, mixing, blending, or disposal.

LIMITED WARRANTY

Central Valley Ag warrants that this Product conforms to the specifications set forth on the label. This Product is reasonably fit for the purpose stated on the label when used in accordance with the label directions and instructions under normal conditions of use.

CENTRAL VALLEY AG NEITHER MAKES, NOR AUTHORIZES ANY AGENT, REPRESENTATIVE OR THIRD PARTY TO MAKE ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, STATUTORY OR OTHERWISE, AS TO THE CONDITION, QUALITY, FITNESS, OR PERFORMANCE OF THIS PRODUCT AND HEREBY DISCLAIMS AND EXCLUDES ALL SUCH WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The use of this Product contrary to label instructions or under abnormal conditions not foreseeable to the Seller or Central Valley Ag voids this limited warranty.

Limitation of Remedies. The exclusive remedy for losses or damages resulting from this Product (including claims based on contract, negligence, strict liability or other legal theories), shall be limited to, at Central Valley Ag's election, one of the following: (1) replacement of the amount of product used; or (2) refund of the purchase price paid for the product; provided that Central Valley Ag's provision of (1) or (2) is conditioned on it first being promptly notified of such loss or damage in writing. Central Valley Ag shall not be liable to the buyer or any other party claiming by, through, or under the buyer for any other losses or damages resulting or relating to this Product, including but not limited to any direct, indirect, special, punitive, economic, incidental or consequential damages or loss of profits or revenue, whether in contract, tort or otherwise. Central Valley Ag neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale, storage, use or handling of this product other than expressly set forth herein.

This product is guaranteed by: **Central Valley Ag** | 2803 N. Nebraska, PO Box 429, York, NE 68467-0429 | **Customer Service:** 1-888-343-0323

Gore-Tex®, Teflon®, Viton® are registered trademarks of The Chemours Company FC.

Contents: Bulk | Density: 9.66 lbs./gal (1.16 kg/L) at 68 °F (20 °C) | Inv. ID: 20006036-000

Safety Data Sheet

Issue Date: 19-Nov-2020 **Revision Date:** 27-Apr-2021 **Version 3**

1. IDENTIFICATION

Product identifier

Product Name CVA ELITE PROTECT UAN

Other means of identification

SDS # VLS-324-ABN2

Product Code FFN 4120

Recommended use of the chemical and restrictions on use

Recommended Use Fertilizer.

Details of the supplier of the safety data sheet

Supplier Address
Central Valley Ag
2803 N. Nebraska
PO Box 429
York, NE 68467-0429

Emergency telephone number

Company Phone Number Business Phone: 888-343-0323

Emergency Telephone FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE EXPOSURE, OR ACCIDENT, CALL:
CHEMTREC (USA) 1-800-424-9300
MEDICAL EMERGENCY 1-877-424-7452

2. HAZARDS IDENTIFICATION

Appearance Color characteristic liquid **Physical state** Liquid **Odor** Sulfurous, ammonia-like odor

Classification

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Reproductive toxicity	Category 1B

Signal Word
Danger

Hazard statements
Causes severe skin burns and eye damage
Suspected of causing cancer
May damage fertility or the unborn child

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response
Immediately call a poison center or doctor/physician
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
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a poison center or doctor/physician
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Alkyl substituted sulfinyl	Proprietary	Proprietary
N-(n-butyl)-thiophosphoric triamide	94317-64-3	1-5
Alkanolamine	Proprietary	Proprietary
Maleated polymer	Proprietary	Proprietary

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General Advice Provide this SDS to medical personnel for treatment.

Eye Contact 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.

Skin Contact Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a poison center or doctor/physician.

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

Ingestion Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

Most important symptoms and effects, both acute and delayed

Symptoms Causes severe skin burns and eye damage.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical
Not determined.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. Wash face, hands and any exposed skin thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

Incompatible Materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Trade Secret	STEL: 6 ppm TWA: 3 ppm	TWA: 3 ppm TWA: 6 mg/m^3 (vacated) TWA: 3 ppm (vacated) TWA: 8 mg/m^3 (vacated) STEL: 6 ppm (vacated) STEL: 15 mg/m^3	IDLH: 30 ppm TWA: 3 ppm TWA: 8 mg/m^3 STEL: 6 ppm STEL: 15 mg/m^3

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear eye/face protection. Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection Wear protective gloves and protective clothing. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Color characteristic liquid	**Odor**	Sulfurous, ammonia-like odor
Color	Characteristic	**Odor Threshold**	Not determined

Property	Values	Remarks • Method
pH	10-11	
Melting point / freezing point	Not determined	
Boiling point / boiling range	Not determined	
Flash point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Flammability Limit in Air		
Upper flammability or explosive limits	Not determined	
Lower flammability or explosive limits	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Autoignition temperature	Not determined	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	

Oxidizing Properties Not determined

Other information

Liquid Density 1.16 g/mL

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to Avoid

Keep out of reach of children.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes severe eye damage.

Skin Contact Causes severe skin burns.

Inhalation Do not inhale.

Ingestion Do not ingest.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Alkyl substituted sulfinyl	= 14500 mg/kg (Rat) = 28300 mg/kg (Rat)	= 40 g/kg (Rat)	> 5.33 mg/L (Rat) 4 h
Dicyandiamide 461-58-5	> 20000 mg/kg (Rat)	-	-
N-(n-butyl)-thiophosphoric triamide 94317-64-3	> 2823 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	-
Alkanolamine	= 1720 mg/kg (Rat)	= 1 mL/kg (Rabbit) = 1000 mg/kg (Rabbit)	-

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Suspected of causing cancer.

Reproductive toxicity May damage fertility or the unborn child.

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

Oral LD50	9,941.50 mg/kg
Dermal LD50	11,584.90 mg/kg
ATEmix (inhalation-dust/mist)	30.00 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Chemical name	Algae/aquatic plants	Fish	Crustacea
Alkyl substituted sulfinyl	12350 - 25500: 96 h Skeletonema costatum mg/L EC50	34000: 96 h Pimephales promelas mg/L LC50 33 - 37: 96 h Oncorhynchus mykiss g/L LC50 static 41.7: 96 h Cyprinus carpio g/L LC50 40: 96 h Lepomis macrochirus g/L LC50 static	7000: 24 h Daphnia species mg/L EC50
N-(n-butyl)-thiophosphoric triamide 94317-64-3		1140: 96 h Lepomis macrochirus mg/L LC50 static	
Alkanolamine	15: 72 h Desmodesmus subspicatus mg/L EC50	300 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 227: 96 h Pimephales promelas mg/L LC50 flow-through 200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 3684: 96 h Brachydanio rerio mg/L LC50 static 114 - 196: 96 h Oncorhynchus mykiss mg/L LC50 static	65: 48 h Daphnia magna mg/L EC50

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Chemical name	Partition coefficient
Alkyl substituted sulfinyl	-2.03
Alkanolamine	-1.91

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No	UN1760
Proper Shipping Name	Corrosive Liquid, n.o.s. (N-(n-butyl)thiophosphoric triamide, contains alkanolamine)
Hazard class	8
Packing Group	II

IATA

UN number	UN1760
Proper Shipping Name	Corrosive Liquid, n.o.s. (N-(n-butyl)thiophosphoric triamide, contains alkanolamine)
Transport hazard class(es)	8
Packing Group	II

IMDG

UN number	UN1760
Proper Shipping Name	Corrosive Liquid, n.o.s. (N-(n-butyl)thiophosphoric triamide, contains alkanolamine)
Transport hazard class(es)	8
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Trade Secret	X	ACTIVE	X	X	X	X	X	X	X
Dicyandiamide	X	ACTIVE	X	X	X	X	X	X	X
N-(n-butyl)-thiophosphoric triamide	X	ACTIVE	X	X					X
Trade Secret	X	ACTIVE	X	X	X	X	X	X	X
Trade Secret	X	ACTIVE	X		X	X	X		X

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

AICS *- Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Trade Secret	X		
Trade Secret	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	Not determined	Not determined	Not determined	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical hazards**	**Personal Protection**
	Not determined	Not determined	Not determined	Not determined

Issue Date: 19-Nov-2020
Revision Date: 27-Apr-2021
Revision Note: Section 14

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet