



Safety Data Sheet
 according to Regulation (EC)
 No. 2015/830



SECTION 1: Identification of the Substance/Mixture and the Company/Undertaking

1.1 Product Identifier	1M134000	Revision Date:	04/03/2020
Product Name:	CARBOTHANE PU 134 - B	Supersedes Date:	10/05/2019
		Version Number:	4
1.2 Relevant identified uses of the substance or mixture and uses advised against	Hardener for 2 components coatings - Industrial use. Advised against: Home DIY applications.		
Product to be mixed with:	CARBOTHANE PU 134 - A		
Mixing ratio by volume Part A/ Part B:	7 / 1		
1.3 Details of the supplier of the safety data sheet			
Manufacturer:	Carboline Italia, S.p.a. Via Margherita Vigano' De Vizzi . n 77 20092 Cinisello Balsamo (MI) Italy		
	Regulatory / Technical Information: +32 67493710 Nivelles, Belgium +39 02253751 Cinisello Balsamo, Italy		
Datasheet Produced by:	Chen, Shi - ehs@stoncor.com		
1.4 Emergency telephone number:	CHEMTREC +1 703 5273887 (Outside US) PPC +1 412 6816669 (Outside US) Centro Antiveleni di Roma +39 06 49978000 (CAV Policlinico Umberto I - Roma)(24h/24h) Emergenza ambientale +39 335-601 32 88 / +39 347-949 84 88 / +39 348-246 90 99		

SECTION 2: Hazard Identification

2.1 Classification of the substance or mixture

Classification according to Classification, Labeling & Packaging Regulation (EC) 1272/2008

HAZARD STATEMENTS

Other EU extensions	EUH204
Flammable Liquid, category 3	H226
Skin Irritation, category 2	H315
Skin Sensitizer, category 1	H317
Eye Irritation, category 2	H319
Acute Toxicity, Inhalation, category 4	H332

STOT, single exposure, category 3, RTI
STOT, repeated exposure, category 2

H335
H373

2.2 Label elements

Symbol(s) of Product



Signal Word

Warning

Named Chemicals on Label

ethylbenzene, Hexamethylene diisocyanate, xylene, hexamethylene diisocyanate, oligomers

HAZARD STATEMENTS

Other EU extensions	EUH204	Contains isocyanates. May produce an allergic reaction.
Flammable Liquid, category 3	H226	Flammable liquid and vapour.
Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
STOT, single exposure, category 3, RTI	H335	May cause respiratory irritation.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.

PRECAUTION PHRASES

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P337+313	If eye irritation persists: Get medical advice/attention.

ADDITIONAL INFORMATION

ADD-02	Content of hexamethylene diisocyanate (CAS-no 822-06-0): <0.5%.
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2.3 Other hazards

No Information

Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

SECTION 3: Composition/Information On Ingredients

3.2 Mixtures

Hazardous Ingredients

<u>CAS-No.</u>	<u>EINEC No.</u>	<u>Name According to EEC</u>	<u>%</u>
28182-81-2	500-060-2	hexamethylene diisocyanate, oligomers	75-100
108-65-6	203-603-9	2-methoxy-1-methylethyl-acetate	10 - <25
1330-20-7	215-535-7	xylene	10 - <25
100-41-4	202-849-4	ethylbenzene	1.0 - <2.5
822-06-0	212-485-8	Hexamethylene diisocyanate	0.1 - <1.0

<u>CAS-No.</u>	<u>REACH Reg No.</u>	<u>CLP Symbols</u>	<u>CLP Hazard Statements</u>	<u>M-Factors</u>
28182-81-2	01-2119485796-17	GHS07	H317-332-335	
108-65-6	01-2119475791-29	GHS02-GHS07	H226-336	
1330-20-7	01-2119488216-32	GHS02-GHS07-GHS08	H226-304-312-315-319-332-335-373	

100-41-4

GHS02-GHS07-GHS08

H225-304-332-373-412

822-06-0

01-2119457571-37

GHS06-GHS08

H302-315-317-319-330-334-335

Additional Information: The text for CLP Hazard Statements shown above (if any) is given in Section 16.

SECTION 4: First-aid Measures

4.1 Description of First Aid Measures

GENERAL NOTES: Show this safety data sheet to the doctor in attendance.

AFTER INHALATION: Keep respiratory tract clear. Provide fresh air, rest and warmth. Call a physician immediately. Give oxygen or artificial respiration if needed. When risk of unconsciousness, place and transport the victim in secured recovery position.

AFTER SKIN CONTACT: Use a mild soap if available. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician. Do not use solvent or thinners to clean skin.

AFTER EYE CONTACT: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. If eye irritation persists, consult a specialist.

AFTER INGESTION: If vomiting occurs spontaneously: Keep head below hips to prevent aspiration of stomach vomit into lungs. Provide fresh air, rest and warmth. Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

Self protection of the first aider:

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Harmful by inhalation. Irritating to respiratory system. May cause sensitization by skin contact. Danger of serious damage to health by prolonged exposure. Irritating to eyes and skin.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11. When symptoms persist or in all cases of doubt seek medical advice.

SECTION 5: Fire-fighting Measures

5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam

FOR SAFETY REASONS NOT TO BE USED: Alcohol, Alcohol based solutions, any other media not listed above. Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Heating or fire conditions liberates toxic gas. Flash back possible over considerable distance. As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Vapours may form explosive mixtures with air. Solvent vapours are heavier than air and may spread along floors and ignite.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Keep containers and surroundings cool with water spray.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Remove all sources of ignition.

6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Clean with detergents. Avoid solvents.

6.4 Reference to other sections

FURTHER INSTRUCTIONS: Please refer to EU disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Electrical equipment should be protected to the appropriate standard. Preparation may charge electrostatically: always use earthing leads when transferring from one container to another. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is being used. Use only in area provided with appropriate exhaust ventilation. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment. Open drum carefully as content may be under pressure. Use only explosion-proof equipment. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing. Apply technical measures to comply with the occupational exposure limits (see section 8).

Keep away from food, drink and animal feeding stuffs. When using, do not eat, drink or smoke. Wash hands before eating, drinking, or smoking.

7.2 Conditions for safe storage, including any incompatibilities

CONDITIONS TO AVOID: Avoid heat, sparks, flames and other ignition sources.

STORAGE CONDITIONS: Store in original container. Store in upright position only. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons. Storage of flammable liquids. Contamination may result in dangerous pressure increases - closed containers may rupture. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. Store away from: oxidising materials, acids, and alkalis.

7.3 Specific end use(s)

No specific advice for **end use** available.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters

Ingredients with Occupational Exposure Limits (UK WELS)

<u>Name</u>	<u>CAS-No.</u>	<u>LTEL ppm</u>	<u>STEL ppm</u>	<u>STEL mg/m3</u>	<u>LTEL mg/m3</u>
hexamethylene diisocyanate, oligomers	28182-81-2				
2-methoxy-1-methylethyl-acetate	108-65-6	50	100	548	274
xylene	1330-20-7	50	100	441	220
ethylbenzene	100-41-4	100	125	552	441
Hexamethylene diisocyanate	822-06-0			0.07	0.02

<u>Name</u>	<u>CAS-No.</u>	<u>OEL Note</u>
hexamethylene diisocyanate, oligomers	28182-81-2	
2-methoxy-1-methylethyl-acetate	108-65-6	Sk
xylene	1330-20-7	Sk
ethylbenzene	100-41-4	Sk
Hexamethylene diisocyanate	822-06-0	Sen

FURTHER ADVICE: Refer to the regulatory exposure limits for the workforce enforced in each country. Some components may not have been classified under the EU CLP Regulation. Annotations: Carc = Capable of causing cancer and/or heritable genetic damage, Sen = Capable of causing occupational asthma, Sk = Can be absorbed through the skin.

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: Always wear a self-contained breathing apparatus or full-face airline respirator when using this chemical.

EYE PROTECTION: If splashes are likely to occur, wear: Face-shield, tightly fitting safety goggles (EN 166).

HAND PROTECTION: Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature). Long sleeved clothing. Remove and wash contaminated clothing before re-use. Use chemical resistant gloves and lotions and barrier creams to prevent drying of the skin. Protective gloves complying with EN 374: Nitrile rubber. Viton®. Recommended glove material for mixed product: Protective gloves complying with EN 374: Nitril rubber. Viton®.

OTHER PROTECTIVE EQUIPMENT: Ensure that eyewash stations and safety showers are close to the workstation location.

ENGINEERING CONTROLS: Ensure adequate ventilation, especially in confined areas.

Chemical Name:

hexamethylene diisocyanate, oligomers

EC No.:

500-060-2

CAS-No.:

28182-81-2

DNELs - Derived no effect level

Route of Exposure	Workers				Consumers			
	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required							
Inhalation								
Dermal								

PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	0.127 mg/l
Fresh water sediments	266700 mg/kg (dry)
Marine water	0.0127 mg/l
Marine sediments	26670 mg/kg (dry)
Food chain	
Microorganisms in sewage treatment soil (agricultural)	53182 mg/kg (dry)
Air	

Chemical Name:

2-methoxy-1-methylethyl-acetate

EC No.:

203-603-9

CAS-No.:

108-65-6

DNELs - Derived no effect level

Route of Exposure	Workers				Consumers			
	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required							
Inhalation	550 mg/m ³			275 mg/m ³				1.67 mg/kg
Dermal				153.5 mg/kg				54.8 mg/kg

PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	0.635 mg/L
Fresh water sediments	3.29 mg/kg
Marine water	0.0635 mg/L
Marine sediments	0.329 mg/kg
Food chain	
Microorganisms in sewage treatment soil (agricultural)	100 mg/L
Air	0.29 mg/kg

Chemical Name:

xylene

EC No.:

215-535-7

CAS-No.:

1330-20-7

DNELs - Derived no effect level

Route of Exposure	Workers				Consumers			
	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required							1.6 mg/kg bw/day
Inhalation	289 mg/m ³	289 mg/m ³		77 mg/m ³	174 mg/m ³	174 mg/m ³		14.8 mg/m ³
Dermal				180 mg/kg bw/day				108 mg/kg bw/day

PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	0.327 mg/L
Fresh water sediments	12.46 mg/kg
Marine water	0.327 mg/L
Marine sediments	12.46 mg/kg
Food chain	
Microorganisms in sewage treatment soil (agricultural)	6.58 mg/L
Air	2.31 mg/kg

Chemical Name:

Hexamethylene diisocyanate

EC No.:

212-485-8

CAS-No.:

822-06-0

DNELs - Derived no effect level

Route of Exposure	Workers				Consumers			
	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required							
Inhalation	70 µg/m ³ irritation (respiratory tract)	70 µg/m ³ irritation (respiratory tract)	35 µg/m ³ irritation (respiratory tract)	35 µg/m ³ irritation (respiratory tract)				
Dermal								

PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	77.4 µg/L
Fresh water sediments	13.34 µg/kg sediment dw
Marine water	7.74 µg/L
Marine sediments	1.344 µg/kg sediment dw
Food chain	
Microorganisms in sewage treatment soil (agricultural)	2.6 µg/kg soil dw
Air	

SECTION 9: Physical and Chemical Properties**9.1 Information on basic physical and chemical properties**

Appearance:	Yellowish
Physical State	LIQUID
Odor	Solvent
Odor threshold	Not determined
pH	Not determined

Melting point / freezing point (°C)	Not determined
Boiling point/range (°C)	136 - 145
Flash Point, (°C)	38
Evaporation rate	Not determined
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	1 - 10.8
Vapour Pressure	Not determined
Vapour density	>1 (air = 1)
Relative density	Not determined
Solubility in / Miscibility with water	Immiscible
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Not determined
Explosive properties	Not determined
Oxidising properties	Not determined

9.2 Other information

VOC Content g/l:	480.0
Grams of VOC per liter of coating product as applied per ISO 11890-1 and/or ISO 11890-2.	
Specific Gravity (g/cm³)	1.07

SECTION 10: Stability and Reactivity

10.1 Reactivity

Reacts violently with amines and alcohol.

10.2 Chemical stability

Stable under recommended storage conditions. Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

10.3 Possibility of hazardous reactions

Preparation reacts slowly with water resulting in evolution of CO₂.

10.4 Conditions to avoid

Avoid heat, sparks, flames and other ignition sources.

10.5 Incompatible materials

Keep away from oxidising agents, strongly acid or alkaline materials, as well as of amines, alcohols and water.

10.6 Hazardous decomposition products

Carbon monoxide, carbon dioxide, nitrogen oxide, cyanides, isocyanate vapours.

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50: No information available on the product itself as the product is not tested.

Inhalation LC50: No information available on the product itself as the product is not tested.

Irritation: Irritating to eyes and skin.

Corrosivity: No information available.

Sensitization:	May cause an allergic skin reaction.
Repeated dose toxicity:	No information available.
Carcinogenicity:	No information available.
Mutagenicity:	No information available.
Toxicity for reproduction:	No information available.
STOT-single exposure:	Vapour/spray mist may irritate respiratory system and lungs.
STOT-repeated exposure:	Central nervous system depression.
Aspiration hazard:	No information available.

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested.
Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Name According to EEC</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>	<u>Gas LC50</u>	<u>Dust/Mist LC50</u>
28182-81-2	hexamethylene diisocyanate, oligomers	5000 mg/kg, oral, rat	>2000 mg/Kg (dermal, rat, M-F)	18500 mg/m ³ /1H inhalation, rat	No information	No information
108-65-6	2-methoxy-1-methylethyl-acetate	8532 mg/kg, (oral, rat)	>5000 mg/kg (dermal, rat)	1105 mg/m ³ /4H	No information	No information
1330-20-7	xylene	>2000 mg/kg (oral-rat)	1100 mg/kg (ATE dermal-rabbit)	11 mg/L (ATE inh/ vapour)	4500 ppmV (ATE inh -Gas)	1.5 mg/L (ATE inh/dust/mist)
100-41-4	ethylbenzene	3500 mg/kg rat, oral	5510 mg/kg, rabbit	4000 ppm, rat, 4h	10000 ppm	1.5 mg/L
822-06-0	Hexamethylene diisocyanate	710 mg/kg (oral-rat)	No information	0.124 mg/L (inhalation, 4h, rat)	23 ppm / 4h	No information

Additional Information:

Allergic persons and workers with difficulty in breathing should not be employed in powder application. Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effect, such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates. Respiration of solvent vapour may cause dizziness. May cause allergic respiratory reaction. May cause allergic skin reaction. Isocyanates may cause acute irritation and/or sensitisation of the respiratory system leading to tightness of the chest, wheeziness and an asthmatic condition. Chronic exposure has been associated with various neurotoxic effects including permanent brain damage. Inhalation of vapour or mist can cause headache, nausea, irritation of nose, throat, and lungs. Hot processing of this material release isocyanate containing vapours, known to be toxic by inhalation.

SECTION 12: Ecological Information

12.1 Toxicity:

EC50 48hr (Daphnia):	No information
IC50 72hr (Algae):	No information
LC50 96hr (fish):	No information

12.2 Persistence and degradability: No information

12.3 Bioaccumulative potential: No information

12.4 Mobility in soil: No information

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects: No information

CAS-No.	Name According to EEC	EC50 48hr	IC50 72hr	LC50 96hr
28182-81-2	hexamethylene diisocyanate, oligomers	127 mg/L (Daphnia magna, static)	> 1000 mg/l (ErC50-static 72h scenedesmus subspicatus)	>100 mg/L (Danio rerio)
108-65-6	2-methoxy-1-methylethyl-acetate	373 mg/L	No information	161 mg/L
1330-20-7	xylene	165 mg/L (Daphnia magna 24h)	3 - 5 mg/L (Selenastrum sp.)	2 - 11 mg/L (Roccus saxatilis), 8.2 mg/L (Salmo gairdneri), 13.5 mg/L (Lepomis macrochirus), 21.0 mg/L (Pimephales promelas)
100-41-4	ethylbenzene	1.37 mg/l	No information	32 mg/l (Bluegill)
822-06-0	Hexamethylene diisocyanate	No information	77.4 mg/L (ErC50, static, desmodesmus subspicatus)	8.8 mg/L (Brachydanio rerio)

SECTION 13: Disposal Considerations

13.1 **WASTE TREATMENT METHODS:** Do not burn, or use a cutting torch on, the empty drum. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local state, and federal regulations. Do not dispose of waste with normal garbage, or to sewer systems.

European Waste Code: 08 01 11*
Packaging Waste Code: 15 01 10

SECTION 14: Transport Information

14.1 UN number	UN1263
14.2 UN proper shipping name	PAINT
Technical name	Not applicable
14.3 Transport hazard class(es)	3
Subsidiary shipping hazard	Not applicable
14.4 Packing group	III
14.5 Environmental hazards	Marine Pollutant: NO
14.6 Special precautions for user	Not applicable
EmS-No.:	F-E, <u>S-E</u>
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Not applicable

SECTION 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

National Regulations:

Denmark Product Registration Number:	Not available
Danish MAL Code:	Not available
Danish MAL Code - Mixture:	Not available
Sweden Product Registration Number:	Not available
Norway Product Registration Number:	Not available
Germany WGK Class:	

Directive 2004/42/CE :	500 g/l (subcat j)
Covered by Directive 2012/18/EC (Seveso III):	P5c
Restrictions to product or to substances according to Annex XVII, Regulation (CE) 1907/2006:	Entry 3, 40

Annex XIV - Authorisation List:**CAS-No. Name According to EEC**

Not Applicable

SVHC - Substances of very high concern (Candidate List):**CAS-No. Name According to EEC**

Not Applicable

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other Information**Text for CLP Hazard Statements shown in Section 3 describing each ingredient:**

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Reasons for revision

This Safety Data Sheet (SDS) has been revised to meet the new EU CLP requirements. There have been both formatting and content changes based on the CLP classification (if applicable), please review each section of the SDS for specific changes. . . .

List of References:

This Safety Data Sheet was compiled with data and information from the following sources:

The Ariel Regulatory Database provided by the 3E Corporation in Copenhagen, Denmark;
 European Union Commission Regulation No. 1907/2006 on REACH as amended within Commission Regulation (EU) 2015/830;
 European Union (EC) Regulation No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) and subsequent technical progress adaptations (ATP);
 EU Council Decision 2000/532/EC and its Annex entitled "List of Wastes".

Acronym & Abbreviation Key:

CLP	Classification, Labeling & Packaging Regulation
EC	European Commission
EU	European Union
US	United States
CAS	Chemical Abstract Service
EINECS	European Inventory of Existing Chemical Substances
REACH	Registration, Evaluation, Authorization of Chemicals Regulation
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
LTEL	Long term exposure limit
STEL	Short term exposure limit
OEL	Occupational exposure limit
ppm	Parts per million
mg/m3	Milligrams per cubic meter
TLV	Threshold Limit Value
ACGIH	American Conference of Governmental Industrial Hygienists
OSHA	Occupational Safety & Health Administration
PEL	Permissible Exposure Limits
VOC	Volatile organic compounds
g/l	Grams per liter
mg/kg	Milligrams per kilogram
N/A	Not applicable
LD50	Lethal dose at 50%
LC50	Lethal concentration at 50%
EC50	Half maximal effective concentration
IC50	Half maximal inhibitory concentration
PBT	Persistent bioaccumulative toxic chemical
vPvB	Very persistent and very bioaccumulative
EEC	European Economic Community
ADR	International Transport of Dangerous Goods by Road
RID	International Transport of Dangerous Goods by Rail
UN	United Nations
IMDG	International Maritime Dangerous Goods Code
IATA	International Air Transport Association
MARPOL	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978
IBC	International Bulk Container
RTI	Respiratory Tract Irritation
NE	Narcotic Effects

For further information, please contact: Technical Services Department

The information on this sheet corresponds to our present knowledge. It is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage, and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions and recommendations are not followed.