SECTION 1. IDENTIFICATION

Identification of the company:	Clariant Plastics & Coating USA LLC 4000 Monroe Road Charlotte, NC, 28205 Telephone No.: +1 704 331 7000 **Information of the substance/preparation:** Product Stewardship, +1-704-331-7710 **Emergency tel. number:** +1 800-424-9300 CHEMTREC

Trade name: **EXOLIT AP 740 F**
Material number: 245122

Primary product use: Flame retardants

Chemical family: mixture of flame retardants

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Combustible dust

GHS label elements

Signal word : Warning

Hazard statements : May form combustible dust concentrations in air.

Precautionary statements :

Prevention:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243 Take precautionary measures against static discharge.
P233 Keep container tightly closed.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Substance name : mixture of flame retardants

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Melamine	108-78-1	>= 20 - < 30
Pentaerythritol	115-77-5	>= 20 - < 30

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. FIRST AID MEASURES

If inhaled	:	Move the victim to fresh air. Give oxygen or artificial respiration if needed. Get immediate medical advice/ attention. Never give anything by mouth to an unconscious person.
In case of skin contact	:	Wash thoroughly with soap and water for 15 minutes. If skin irritation occurs, seek medical attention.
In case of eye contact	:	Flush eyes with water at least 15 minutes. Get medical attention if eye irritation develops or persists.
If swallowed	:	If swallowed, DO NOT induce vomiting. Do not give anything to drink. Call a physician immediately.
Most important symptoms and effects, both acute and delayed	:	The possible symptoms known are those derived from the labelling (see section 2). The possible risks known are those derived from the labelling (see section 2).
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	water
Specific hazards during firefighting	:	In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO) Carbon dioxide (CO2) Ammonia Electrical grounding of equipment is required to prevent possible dust explosion. Emits toxic fumes under fire conditions.
Further information	:	Exercise caution when fighting any chemical fire. Use NIOSH approved self-contained breathing apparatus and full protective clothing.
Special protective equipment for firefighters	:	Self-contained breathing apparatus

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions,	:	Wear suitable protective equipment.

protective equipment and emergency procedures		Small spills may be flushed to the sewer or swept up. Larger spills should be collected by shovelling into appropriate waste collection containers. Clean-up by flushing with water if desired or removal of contaminated soil. Utilize recommended clothing and equipment.
Environmental precautions	:	The product should not be allowed to enter drains, water courses or the soil.
Methods and materials for containment and cleaning up	:	Pick up mechanically. Rinse away rest with water. Dispose of contaminated material as prescribed

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	No special measures necessary.
Advice on safe handling	:	Avoid dust formation. Keep away from sources of ignition. Lead off electrostatic charges. Avoid inhalation, ingestion and contact with skin and eyes. Wash thoroughly after handling.
Technical measures/Precautions	:	Store in original container. Keep container tightly closed. Store in a cool, dry, well-ventilated area.
Materials to avoid	:	Do not store with alkalies

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Melamine	108-78-1	TWA	3 mg/m3	US WEEL
Pentaerythritol	115-77-5	TWA	10 mg/m3	ACGIH
		TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0

		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
Melamine	108-78-1	TWA	3 mg/m3	US WEEL
Pentaerythritol	115-77-5	TWA	10 mg/m3	ACGIH
		TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0

Engineering measures : Local ventilation recommended - mechanical ventilation may be used.

Personal protective equipment

Respiratory protection : Use NIOSH/MSHA approved respirators following manufacturer's recommendations where dust or fume may be generated.

Hand protection
Remarks : Butyl Rubber, PVC Or Neoprene.

Eye protection : Safety glasses or chemical splash goggles.

Skin and body protection : Wear suitable protective equipment.

Hygiene measures : Clean skin thoroughly after work; apply skin cream.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : solid

Colour : white

Odour : odourless

Odour Threshold : Not tested

pH : approx. 9.2 (25 °C)
Concentration: 10 g/l

Melting point : no data available

Boiling point	:	no data available
Flash point	:	Not applicable
Evaporation rate	:	no data available
Flammability (solid, gas)	:	not determined
Self-ignition	:	Not applicable
Burning number	:	1 Does not catch fire
Upper explosion limit / upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	no data available
Relative density	:	no data available
Density	:	1.8 g/cm3 (25 °C)
Bulk density	:	610 kg/m3 (20 °C)
Solubility(ies)		
Water solubility	:	< 30 g/l (25 °C)
Partition coefficient: n-octanol/water	:	not determined
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	> 200 °C Heating rate: 5 K/min Method: DTA start of decomposition
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	no data available
Explosive properties	:	There are no chemical groups associated with explosive properties present in the molecule. Method: Expert judgement
Oxidizing properties	:	Method: Expert judgement not oxidizing The product does not contain organic peroxide-

groups which result from either the manufacturing process or from added ingredients.

Surface tension : Based on chemical structure, no surface activity is expected or can be predicted.

Particle size : not available

SECTION 10. STABILITY AND REACTIVITY

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

Chemical stability : Stable

Possibility of hazardous reactions : The substance or mixture does not emit flammable gases in contact with water.
Not corrosive to metals
Contact with strong bases liberates ammonia.
Risk of dust explosion.

Conditions to avoid : Protect from heat/overheating.

Keep away from strong bases.

Incompatible materials : none

Hazardous decomposition products : Ammonia, formaldehyde (depending on temperature and type and time of processing.)

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Components:

Melamine:

Acute oral toxicity : LD50 (Rat, male and female): 3,161 - 3,828 mg/kg
Method: Other
GLP: No information available.

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.19 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403
GLP: yes

Acute dermal toxicity : Remarks: Not applicable

Pentaerythritol:

Acute oral toxicity	:	LD50 (Rat, male and female): > 5,110 mg/kg Method: OECD Test Guideline 401 GLP: yes
Acute inhalation toxicity	:	LC50 (Rat, male): > 0.85 mg/l Exposure time: 4 h Method: Other GLP: no Remarks: By analogy with a product of similar composition
Acute dermal toxicity	:	LD50 (Rabbit): > 10,000 mg/kg Method: OECD Test Guideline 402 GLP: no

Skin corrosion/irritation

Product:

Species: Rabbit
Result: slight irritant effect - does not require labelling
Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Components:

Melamine:

Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

Pentaerythritol:

Species: Rabbit
Exposure time: 4 h
Method: Draize Test
Result: No skin irritation
GLP: no

Serious eye damage/eye irritation

Product:

Species: rabbit eye
Result: slight irritant effect - does not require labelling
Remarks: The product has not been tested. The information is derived from the properties of the individual components.

Components:

Melamine:

Species: rabbit eye
Result: No eye irritation
Method: Other
GLP: no

Pentaerythritol:

Species: rabbit eye
Result: non-irritant
Method: OECD Test Guideline 405
GLP: yes
Remarks: By analogy with a product of similar composition

Respiratory or skin sensitisation

Product:

Remarks: not tested.

Components:

Melamine:

Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.
GLP: yes

Pentaerythritol:

Test Type: Mouse local lymphnode assay
Exposure routes: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: Does not cause skin sensitisation.
GLP: yes

Germ cell mutagenicity

Components:

Melamine:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 50 - 5000 µg/plate
Metabolic activation: with and without metabolic activation
Method: Ames test
Result: negative
GLP: yes

Test Type: In vitro gene mutation study in mammalian cells
Test system: Chinese hamster ovary cells
Concentration: 600 - 1000 µg/ml
Metabolic activation: with and without metabolic activation
Method: Other
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Concentration: 240 - 300 µg/ml
Metabolic activation: with and without metabolic activation
Method: Other
Result: negative
GLP: No information available.

Genotoxicity in vivo : Test Type: Chromosome Aberration Test
Species: Mouse (male and female)
Strain: CD1
Cell type: Bone marrow
Application Route: oral (gavage)
Exposure time: 1 - 2 treatments, 24 h
Dose: 1000 - 10000 - 20000 mg/kg
Method: Other
Result: negative
GLP: yes

Germ cell mutagenicity - Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Pentaerythritol:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 312,5 - 5000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: Ames test
Test system: Escherichia coli
Concentration: 312,5 - 5000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster lung cells
Concentration: 0,4 - 1,4 mg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

GLP: yes

Test Type: Mouse lymphoma assay
Test system: mouse lymphoma cells
Concentration: 100 - 1361 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Germ cell mutagenicity - Assessment : It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.

Carcinogenicity

Components:

Melamine:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Pentaerythritol:

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

IARC Not listed

OSHA Not listed

NTP Not listed

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : No information available.

Components:

Melamine:

Effects on fertility : Test Type: Fertility/early embryonic development
Species: rodent
Method: Other
GLP: No information available.
Remarks: Fertility and developmental toxicity tests did not reveal any effect on reproduction.

Effects on foetal development : Species: Rat
Strain: wistar
Application Route: oral (feed)
Dose: 136 - 400 - 1060 mg/kg
General Toxicity Maternal: NOAEL: 400 mg/kg body weight

Teratogenicity: NOAEL: 1,060 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity
Embryotoxicity classification not possible from current data.

Pentaerythritol:

Effects on fertility : Test Type: One generation study
Species: Rat, male and female
Application Route: oral (gavage)
Dose: 100 - 300 - 1000 mg/kg
General Toxicity - Parent: NOAEL: 1,000 mg/kg body weight
General Toxicity F1: NOAEL: 1,000 mg/kg body weight
Method: OECD Test Guideline 422
GLP: yes

Effects on foetal development : Species: Rat, female
Strain: wistar
Application Route: oral (gavage)
Dose: 100 - 300 - 1000 mg/kg
General Toxicity Maternal: NOAEL: 100 mg/kg body weight
Teratogenicity: NOAEL: 100 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

Reproductive toxicity - Assessment : Classification as "toxic for reproduction" is not justifiable.
Classification as "teratogenic" is not justifiable.

STOT - single exposure

Product:

Remarks: not available

Components:

Melamine:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Pentaerythritol:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Product:

Remarks: not available

Components:

Melamine:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Pentaerythritol:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

Melamine:

Species: Rat, male and female
NOAEL: 750
Application Route: oral (feed)
Exposure time: 13 w
Number of exposures: daily
Dose: 750 - 18000 ppm nominal in die
Group: yes
Method: Repeated Dose Toxicity (subchronic study)
GLP: No information available.

Application Route: Inhalation
Remarks: This information is not available.

Application Route: Skin contact
Remarks: This information is not available.

Pentaerythritol:

Species: Rat, male and female
NOAEL: 100 mg/kg
Application Route: oral (gavage)
Exposure time: 39 d (f), 46 d (m)
Number of exposures: daily
Dose: 100 - 300 - 1000 mg/kg
Group: yes
Method: OECD Test Guideline 422
GLP: yes

Aspiration toxicity

Components:

Melamine:

No aspiration toxicity classification

Pentaerythritol:

No aspiration toxicity classification

Experience with human exposure

Product:

General Information : The possible symptoms known are those derived from the labelling (see section 2).

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: no data available

Toxicity to soil dwelling organisms : Remarks: not available

Plant toxicity : Remarks: not available

Toxicity to terrestrial organisms : Remarks: not available

Components:

Melamine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 3,000 mg/l
Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: no
Method: Other
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia sp. (water flea)): 200 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Method: US-EPA FIFRA 72-2
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 325 mg/l
End point: Growth rate
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no data available
Method: Other
GLP: yes

Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): >= 5.1 mg/l
End point: length of young fish
Exposure time: 36 d
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 210
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia sp. (water flea)): >= 11 mg/l
End point: Reproduction rate
Exposure time: 21 d
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 211
GLP: yes

Toxicity to microorganisms : EC0 (Nitrobacter sp.): > 100 mg/l
End point: Nitrate formation rate
Exposure time: 2 h
Test Type: static test
Analytical monitoring: no data available
Method: Other
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Plant toxicity : Remarks: Not applicable

Sediment toxicity : Remarks: Not applicable

Toxicity to terrestrial organisms : Remarks: Not applicable

Pentaerythritol:

Toxicity to fish : LC50 (Orycias latipes): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: no data available
Method: OECD Test Guideline 203
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 24 h
Test Type: static test
Analytical monitoring: no data available
Method: OECD Test Guideline 202
GLP: yes
Remarks: The details of the toxic effect relate to the nominal

concentration.

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes
Remarks: By analogy with a product of similar composition
The details of the toxic effect relate to the nominal concentration.

EC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 201
GLP: yes
Remarks: By analogy with a product of similar composition
The details of the toxic effect relate to the nominal concentration.

Toxicity to fish (Chronic toxicity) : Remarks: not required

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1,000 mg/l
End point: Reproduction rate
Exposure time: 21 d
Test Type: semi-static test
Analytical monitoring: no data available
Method: OECD Test Guideline 211
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to microorganisms : EC50 (activated sludge of a predominantly domestic sewage): > 1,000 mg/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 3 h
Test Type: aquatic
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

NOEC (activated sludge of a predominantly domestic sewage): 1,000 mg/l
End point: Bacteria toxicity (respiration inhibition)

Exposure time: 3 h
Test Type: aquatic
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to soil dwelling organisms : Remarks: The study is not necessary from a scientific perspective.

Plant toxicity : Remarks: The study is not necessary from a scientific perspective.

Sediment toxicity : Remarks: The study is not necessary from a scientific perspective.

Toxicity to terrestrial organisms : Remarks: The study is not necessary from a scientific perspective.

Persistence and degradability

Product:

Biodegradability : Remarks: Not applicable

Components:

Melamine:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 100 mg DOC/l
Dissolved organic carbon (DOC)
Result: not rapidly degradable
Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 302B
GLP: No information available.

aerobic
Inoculum: activated sludge
Method: Other
GLP: No information available.
Remarks: The product is biodegradable after lengthy adaptation.

Physico-chemical removability : Remarks: Not readily eliminated from water.

Pentaerythritol:

Biodegradability : aerobic
Inoculum: activated sludge, domestic
Concentration: 10 mg/l DOC

CO2 formation in % of theoretical value
Result: Readily biodegradable.
Biodegradation: 83.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310
GLP: No information available.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: not available

Components:

Melamine:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 0.38 - 3.8
Exposure time: 42 d
Concentration: < 0.2 - 2 mg/l
Method: Other
GLP: No information available.

Pentaerythritol:

Bioaccumulation : Remarks: Due to the low logPow bioaccumulation is not expected

Mobility in soil

Product:

Distribution among environmental compartments : Remarks: not available

Components:

Melamine:

Distribution among environmental compartments : Adsorption/Soil
Medium: water - soil
log Koc: 1.13 - 1.51
Method: estimated

Pentaerythritol:

Distribution among environmental compartments : Remarks: Not applicable

Other adverse effects

Product:

Additional ecological information : May contribute to eutrophication in static waters, therefore should not be released into surface waters
The product has not been tested. The information is derived

from the properties of the individual components.

Components:

Melamine:

Environmental fate and pathways	:	no data available
Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Pentaerythritol:

Environmental fate and pathways	:	not available
Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
Additional ecological information	:	Do not allow to enter ground water, waterways or waste water.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

RCRA - Resource Conservation and Recovery Authorization Act	:	No -- Not as sold.
Waste Code	:	NONE
Waste from residues	:	Small quantities may be treated in aerobic wastewater treatment systems. Larger quantities may be incinerated or landfilled after solidification in permitted systems.
Contaminated packaging	:	Uncontaminated packaging may be taken for recycling

SECTION 14. TRANSPORT INFORMATION

DOT	not restricted
IATA	not restricted
IMDG	not restricted

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	Combustible dust
SARA 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.

Clean Water Act

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

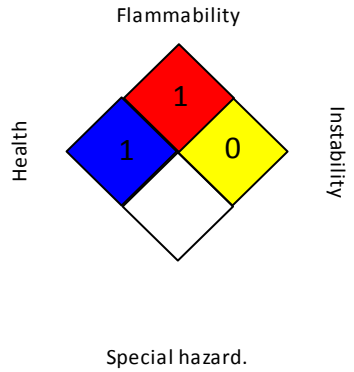
The components of this product are reported in the following inventories:

TSCA	:	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)

ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
US WEEL / TWA	:	8-hr TWA

AICS - Australian Inventory of Chemical Substances; 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); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - 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 - 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

Observe national and local legal requirements
Avoid contact with skin and eyes. wear proper protective equipment. Wash thoroughly after handling. keep in original containers at temperatures not exceeding 25 C.

Revision Date : 01/29/2018

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