SAFETY DATA SHEET

TRINSEO LLC

Product name: MAGNUM™ 342EZ ABS Resin Natural STA **Issue Date:** 11/10/2021
Print Date: 08/29/2022

TRINSEO LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: MAGNUM™ 342EZ ABS Resin Natural STA

Recommended use of the chemical and restrictions on use
Identified uses: A polystyrene plastic - For industrial conversion as a raw material for manufacture of articles or goods. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

COMPANY IDENTIFICATION
TRINSEO LLC
1000 CHESTERBROOK, SUITE 300
BERWYN PA 19312-1084
UNITED STATES

Customer Information Number: 888-789-7661
SDSQuestion@trinseo.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: +(1)-703-527-3887
Local Emergency Contact: +(1)-800-424-9300

2. HAZARDS IDENTIFICATION

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

Label elements

Signal word: **WARNING!**

Hazards
If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Acrylonitrile/butadiene/ styrene resin	9003-56-9	>= 98.0 %
N,N'-Distearoylethylene diamine	110-30-5	>= 1.0 - < 10.0 %
Ethylbenzene	100-41-4	>= 0.1 - < 0.25 %
Styrene	100-42-5	>= 0.1 - < 0.25 %

4. FIRST AID MEASURES

Description of first aid measures
General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing; consult a physician.

Skin contact: Wash off with plenty of water. Seek first aid or medical attention as needed. If molten material comes in contact with the skin, do not apply ice but cool under ice water or running stream of water. DO NOT attempt to remove the material from skin. Removal could result in severe tissue damage. Seek medical attention immediately. Suitable emergency safety shower facility should be immediately available.

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, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel.

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: If burn is present, treat as any thermal burn, after decontamination. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Extinguishing media

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

Unsuitable extinguishing media: None known..

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.. Combustion products may include and are not limited to:. Nitrogen oxides.. Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of:. Styrene.. Hydrogen cyanide..

Unusual Fire and Explosion Hazards: Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, do not permit dust to accumulate.. Dense smoke is produced when product burns..

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition.. If material is molten, do not apply direct waterstream. Use fine water spray or foam.. Cool surroundings with water to localize fire zone.. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires..

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). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Spilled material may cause a slipping hazard. 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: Contain spilled material if possible. Sweep up. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. Avoid breathing process fumes. Use with adequate ventilation. When appropriate, unique handling information for containers can be found on the product label. Workers should be protected from the possibility of contact with molten resin. Do not get molten material in eyes, on skin or clothing. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge.

Conditions for safe storage: Store in accordance with good manufacturing practices.

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.

Component	Regulation	Type of listing	Value
N,N'-Distearoylethylene diamine	ACGIH	TWA Inhalable particulate matter	10 mg/m3
	Further information: LRT irr: Lower Respiratory Tract irritation; J: Does not include stearates of toxic metals.; A4: Not classifiable as a human carcinogen; varies: varies		
	ACGIH	TWA Respirable particulate matter	3 mg/m3
	Further information: LRT irr: Lower Respiratory Tract irritation; J: Does not include stearates of toxic metals.; A4: Not classifiable as a human carcinogen; varies: varies		
Ethylbenzene	ACGIH	TWA	20 ppm
	Further information: cochlear imp: Cochlear impair; kidney dam (nephropathy): Kidney damage (nephropathy); URT irr: Upper Respiratory Tract irritation; BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A3: Confirmed animal carcinogen with unknown relevance to humans		
	OSHA Z-1	TWA	435 mg/m3 100 ppm
	Further information: (b): The value in mg/m3 is approximate.		
	OSHA P0	TWA	435 mg/m3 100 ppm
	OSHA P0	STEL	545 mg/m3 125 ppm
	NIOSH REL	TWA	435 mg/m3 100 ppm
	NIOSH REL	ST	545 mg/m3 125 ppm
Styrene	OSHA Z-1		See Further information
	Further information: (2): See Table Z-2		
	OSHA Z-2	TWA	100 ppm
	Further information: Z37.15-1969		
	OSHA Z-2	CEIL	200 ppm
	Further information: Z37.15-1969		
	OSHA Z-2	Peak	600 ppm
	Further information: Z37.15-1969		
	ACGIH	TWA	20 ppm
	Further information: CNS impair: Central Nervous System impairment; URT irr: Upper Respiratory Tract irritation; peripheral neuropathy: Peripheral neuropathy; (): Adopted values or notations enclosed are those for which changes are proposed in the NIC; See Notice of Intended Changes (NIC); BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A4: Not classifiable as a human carcinogen		

	ACGIH	STEL	40 ppm
	Further information: CNS impair: Central Nervous System impairment; URT irr: Upper Respiratory Tract irritation; peripheral neuropathy: Peripheral neuropathy; (): Adopted values or notations enclosed are those for which changes are proposed in the NIC; See Notice of Intended Changes (NIC); BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A4: Not classifiable as a human carcinogen		
	OSHA P0	TWA	215 mg/m3 50 ppm
	OSHA P0	STEL	425 mg/m3 100 ppm
	NIOSH REL	TWA	215 mg/m3 50 ppm
	NIOSH REL	ST	425 mg/m3 100 ppm

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI
Styrene	100-42-5	Mandelic acid plus phenylglyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	400 mg/g Creatinine	ACGIH BEI
		Styrene	Urine	End of shift (As soon as possible after exposure ceases)	40 µg/l	ACGIH BEI

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. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin protection

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized. Use gloves to protect from mechanical injury. Selection of

gloves will depend on the task. Use gloves with insulation for thermal protection, when needed.
Other protection: No precautions other than clean body-covering clothing should be needed.

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. Use an approved air-purifying respirator when vapors are generated at increased temperatures or when dust or mist is present.
The following should be effective types of air-purifying respirators: When dust/mist are present use a/an Particulate filter. When combinations of vapors, acids, or dusts/mists are present use a/an Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Pellets or Granules
Color	White
Odor	Odorless
Odor Threshold	No test data available
pH	Not applicable
Melting point/range	No test data available
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point	**closed cup** Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	May form combustible dust concentrations in air during processing, handling or other means.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	1.03 - 1.05 *ASTM D 792*
Water solubility	negligible
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	Not applicable
Explosive properties	No test data available
Oxidizing properties	No test data available
Molecular weight	No test data available

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

10. STABILITY AND REACTIVITY

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

Chemical stability: Stable.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid temperatures above 300 °C
Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: None known.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials.. Processing may release fumes and other decomposition products. At temperatures exceeding melt temperatures, polymer fragments can be released. Fumes can be irritating..

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. May cause choking if swallowed.

Single dose oral LD50 has not been determined.

Typical for this family of materials.
LD50, Rat, > 5,000 mg/kg Estimated.

Information for components:

Acrylonitrile/butadiene/ styrene resin
Single dose oral LD50 has not been determined.

N,N'-Distearoylethylene diamine
LD50, Rat, > 5,000 mg/kg

Ethylbenzene
LD50, Rat, 3,500 mg/kg

Styrene
LD50, Rat, male and female, 5,000 mg/kg

Acute dermal toxicity
No adverse effects anticipated by skin absorption.

The dermal LD50 has not been determined.

Typical for this family of materials.
LD50, Rabbit, > 2,000 mg/kg Estimated.

Information for components:

Acrylonitrile/butadiene/ styrene resin
The dermal LD50 has not been determined.

N,N'-Distearoylethylene diamine
LD50, Rabbit, > 2,000 mg/kg

Ethylbenzene
LD50, Rabbit, 15,500 mg/kg

Styrene
LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to dust. Vapors released during thermal processing may cause respiratory irritation.

The LC50 has not been determined.,
Information for components:

Acrylonitrile/butadiene/ styrene resin
The LC50 has not been determined.

N,N'-Distearoylethylene diamine
The LC50 has not been determined.

Ethylbenzene
LC50, Rat, 4 Hour, vapour, 17.2 mg/l

Styrene
LC50, Rat, 4 Hour, vapour, 11.8 mg/l

Skin corrosion/irritation
Prolonged contact is essentially nonirritating to skin.
Mechanical injury only.
Under normal processing conditions, material is heated to elevated temperatures; contact with the material may cause thermal burns.

Information for components:

N,N'-Distearoylethylene diamine
Prolonged contact is essentially nonirritating to skin.

Ethylbenzene
Brief contact may cause moderate skin irritation with local redness.
Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.
May cause drying and flaking of the skin.

Styrene
Prolonged contact may cause skin irritation with local redness.
May cause drying and flaking of the skin.

Serious eye damage/eye irritation
Solid or dust may cause irritation or corneal injury due to mechanical action.
Elevated temperatures may generate vapor levels sufficient to cause eye irritation. Effects may include discomfort and redness.

Information for components:

N,N'-Distearoylethylene diamine
May cause slight eye irritation.
Corneal injury is unlikely.

Ethylbenzene
May cause moderate eye irritation.
Vapor may cause lacrimation (tears).

Styrene
May cause moderate eye irritation.
Vapor may cause eye irritation experienced as mild discomfort and redness.
Vapor may cause lacrimation (tears).

Sensitization
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Information for components:

N,N'-Distearoylethylene diamine
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Ethylbenzene
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Styrene

For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
Sensitization - human:
No allergic response observed.

Specific Target Organ Systemic Toxicity (Single Exposure)
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Information for components:

N,N'-Distearoylethylene diamine
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Ethylbenzene
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Styrene
Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.
Target Organs: respiratory tract irritation

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Information for components:

N,N'-Distearoylethylene diamine
Based on physical properties, not likely to be an aspiration hazard.

Ethylbenzene
Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia. May be fatal if swallowed and enters airways.

Styrene
May be fatal if swallowed and enters airways.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

Information for components:

N,N'-Distearoylethylene diamine
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Ethylbenzene
In animals, effects have been reported on the following organs:

May cause hearing loss based on animal data.
Kidney.
Liver.
Lung.
Although one early inhalation study on ethylbenzene reported an adverse effect on the testes, recent, more comprehensive studies have not shown this effect.

Styrene
In animals, effects have been reported on the following organs:
Central nervous system.
Styrene is reported to have caused hearing loss in laboratory animals. Chronic and intensive styrene exposure is reported to reduce the hearing thresholds in workers.
Some studies in humans allege that repeated exposure to styrene may result in minor, subclinical decreases in the ability to discriminate between colors.

Carcinogenicity
Ethylbenzene has been shown to cause cancer in laboratory animals. There is no evidence that these findings are relevant to humans. An increased incidence of lung tumors was observed in mice from an inhalation study on styrene. The relevance of this finding to humans is uncertain since data from mode of action investigations of mouse lung tumors coupled with other long-term animal studies and epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic. The very small quantities of styrene monomer are not expected to cause any hazardous condition because of the low concentration in the resin. As the resin is supplied, monomer is not likely to be released into the surroundings in toxicologically significant amounts. Monomer may be released during processing of the resin and the hazard may vary from negligible to very low depending on actual exposure.

Information for components:

N,N'-Distearoylethylene diamine
Did not cause cancer in laboratory animals.

Ethylbenzene
Ethylbenzene has been shown to cause cancer in laboratory animals. There is no evidence that these findings are relevant to humans.

Styrene
An increased incidence of lung tumors was observed in mice from an inhalation study on styrene. The relevance of this finding to humans is uncertain since data from mode of action investigations of mouse lung tumors coupled with other long-term animal studies and epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic.

Carcinogenicity

Component	**List**	**Classification**
Ethylbenzene	IARC	Group 2B: Possibly carcinogenic to humans
	ACGIH	A3: Confirmed animal carcinogen with unknown relevance to humans.
Styrene	IARC	Group 2A: Probably carcinogenic to humans
	US NTP	Reasonably anticipated to be a human carcinogen

Teratogenicity
No relevant data found.

Information for components:

N,N'-Distearoylethylene diamine
No relevant data found.

Ethylbenzene
Has caused birth defects in laboratory animals only at doses toxic to the mother. Has been toxic to the fetus in lab animals at doses nontoxic to the mother.

Styrene
Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive toxicity
No relevant data found.

Information for components:

N,N'-Distearoylethylene diamine
No relevant data found.

Ethylbenzene
In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Styrene
In animal studies, did not interfere with reproduction.

Mutagenicity
No relevant data found.

Information for components:

Ethylbenzene
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Styrene
In vitro genetic toxicity studies were inconclusive. Animal genetic toxicity studies were inconclusive

12. ECOLOGICAL INFORMATION

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

Toxicity

Acute toxicity to fish
Not expected to be acutely toxic, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

Persistence and degradability

Biodegradability: This water-insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Mobility in soil

In the terrestrial environment, material is expected to remain in the soil.
In the aquatic environment, material will sink and remain in the sediment.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. Landfill.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

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

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Components	**CASRN**
Ethylbenzene	100-41-4
Styrene	100-42-5

Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65
WARNING: This product can expose you to chemicals including Ethylbenzene, Acrylonitrile, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

16. OTHER INFORMATION

Revision
Identification Number: 16858 / A561 / Issue Date: 11/10/2021 / Version: 8.1
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
CEIL	Acceptable ceiling concentration
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
OSHA Z-2	USA. Occupational Exposure Limits (OSHA) - Table Z-2

Peak	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
ST	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

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); 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

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.

TRINSEO 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

WARNING

Hazards: If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

Refer to the Safety Data Sheet before use.

COMPANY IDENTIFICATION
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UNITED STATES

EMERGENCY TELEPHONE NUMBER
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Revision
Identification Number: 16858 / A561 / Issue Date: 11/10/2021 / Version: 8.1