

1. Identification

Product identifier	ZERO START ETHER – CYLINDER	
Other means of identification		
SDS number	LT16600	
Product code	3836258, 3833593 A, 3833593 B, 3302657, 3835603, 3835604 A, 3835604 B.	
Recommended use	Pressurized, cylinder-contained starting fluid for cold starting diesel engines	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	Cummins Filtration	
Address	1200 Fleetguard Road Cookeville, TN 38506 United States	
Telephone	24 Hours per day	1-800-22FILTER (1-800-223-4583)
E-mail	Not available.	
Emergency phone number	Within Continental U.S.	Chemtrec 1-800-424-9300
	Outside U.S.	Chemtrec 703-527-3887
Supplier	Not available.	

2. Hazard(s) identification

Physical hazards	Flammable gases	Category 2
	Gases under pressure	Dissolved gas
Health hazards	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
Environmental hazards	This mixture does not meet the classification criteria according to OSHA HazCom 2012.	
OSHA defined hazards	This mixture does not meet the classification criteria according to OSHA HazCom 2012.	
Label elements		



Signal word	Danger
Hazard statement	Flammable gas. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. May cause drowsiness or dizziness.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing mist or vapor. Use only outdoors or in a well-ventilated area.
Response	If swallowed: Immediately call a poison center/doctor. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. Do NOT induce vomiting. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Store in a well-ventilated place.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Prolonged or repeated overexposure may cause liver and kidney effects. In extremely high concentrations, product may act as an asphyxiant and cause increased breathing and pulse rates, fatigue and unconsciousness.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
DIETHYL ETHER	DIETHYL ETHER	60-29-7	65
CARBON DIOXIDE	CO2	124-38-9	14
Distillates (petroleum), Solvent-refined Light Paraffinic	Not Available	64741-89-5	12
Heptane	n-Heptane	142-82-5	9

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Alcohol resistant foam. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire fighting equipment/instructions	DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Move containers from fire area if you can do so without risk. Do not direct water at source of leak or safety devices as icing may occur. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Flammable gas.
Hazardous combustion products	Not available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Isolate area until gas has dispersed. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate personal protective equipment. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Stop leak if you can do so without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Isolate area until gas has dispersed. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Use water spray to reduce vapors or divert vapor cloud drift.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage**Precautions for safe handling**

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. All equipment used when handling the product must be grounded. Avoid breathing mist or vapor. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
CARBON DIOXIDE (CAS 124-38-9)	PEL	9000 mg/m ³	
DIETHYL ETHER (CAS 60-29-7)	PEL	5000 ppm 1200 mg/m ³	
Distillates (petroleum), Solvent-refined Light Paraffinic (CAS 64741-89-5)	PEL	400 ppm 5 mg/m ³	Mist.
Heptane (CAS 142-82-5)	PEL	2000 mg/m ³ 500 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
CARBON DIOXIDE (CAS 124-38-9)	STEL	30000 ppm	
DIETHYL ETHER (CAS 60-29-7)	TWA STEL	5000 ppm 500 ppm	
Distillates (petroleum), Solvent-refined Light Paraffinic (CAS 64741-89-5)	TWA TWA	400 ppm 5 mg/m ³	Inhalable fraction.
Heptane (CAS 142-82-5)	STEL TWA	500 ppm 400 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
CARBON DIOXIDE (CAS 124-38-9)	STEL	54000 mg/m3	
	TWA	30000 ppm	
		9000 mg/m3	
Distillates (petroleum), Solvent-refined Light Paraffinic (CAS 64741-89-5)	STEL	5000 ppm	Mist.
		10 mg/m3	
Heptane (CAS 142-82-5)	TWA	5 mg/m3	Mist.
	Ceiling	1800 mg/m3	
	TWA	440 ppm	
		350 mg/m3	
		85 ppm	

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear protective gloves.
Other	Wear appropriate chemical-resistant clothing.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Physical state	Liquid.
Form	Liquid. Dissolved gas. aerosol-type cylinder
Color	Pale yellow Clear.
Odor	Ether-like.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	95 °F (35 °C) (for Diethyl Ether)
Flash point	-49.0 °F (-45.0 °C) (Diethyl ether)
Evaporation rate	Not available.
Flammability (solid, gas)	Flammable gas.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.9 (Diethyl ether)
Flammability limit - upper (%)	36 (Diethyl ether)
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	150 psig @ 70°F (pressure in can)

Vapor density	2.5 (Diethyl ether)
Relative density	Not available.
Solubility(ies)	
Solubility (water)	slight
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Specific gravity	0.7 (concentrate)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Aluminum.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May be fatal if swallowed and enters airways. May be an aspiration hazard. Aspiration may occur during swallowing or vomiting, resulting in lung injury.

Most important symptoms/effects, acute and delayed Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Components	Species	Test Results
CARBON DIOXIDE (CAS 124-38-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	Not applicable
<i>Inhalation</i>		
LC50	Rat	166170 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	Not applicable
DIETHYL ETHER (CAS 60-29-7)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 14200 mg/kg
<i>Inhalation</i>		
LC50	Rat	32000 ppm, 4 hours
<i>Oral</i>		
LD50	Rat	1200 mg/kg

Components	Species	Test Results
Distillates (petroleum), Solvent-refined Light Paraffinic (CAS 64741-89-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 4 mg/l/4h
<i>Oral</i>		
LD50	Rat	> 4000 mg/kg
Heptane (CAS 142-82-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	3400 mg/kg
<i>Inhalation</i>		
LC50	Rat	102.5 mg/l, 4 hours
<i>Oral</i>		
LD50	Rat	> 15000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitizer	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
DIETHYL ETHER (CAS 60-29-7)	3 Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Distillates (petroleum), Solvent-refined Light Paraffinic (CAS 64741-89-5)	Known To Be Human Carcinogen.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Narcotic effects.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration toxicity	May be fatal if swallowed and enters airways. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.
Chronic effects	Prolonged inhalation may be harmful.

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.

Components	Species	Test Results
DIETHYL ETHER (CAS 60-29-7)		
Aquatic		
<i>Acute</i>		
Algae	EC50 Green algae (Desmodesmus subspicatus)	> 100 mg/l, 72 hours

Components		Species	Test Results
	NOEC	Green algae (Desmodesmus subspicatus)	> 100 mg/l, 72 hours
Crustacea	IC50	Water flea (Daphnia magna)	1380 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	2560 mg/l, 96 hours
<i>Chronic</i>			
Crustacea	NOEC	Water flea (Daphnia magna)	100 mg/l, 21 days
Heptane (CAS 142-82-5)			
<i>Acute</i>			
	LC50	Rainbow trout (Oncorhynchus mykiss)	5.738 mg/l, 96 hours (QSAR Estimation)
Aquatic			
<i>Acute</i>			
Algae	EC50	Algae	4.338 mg/l, 72 Hours (QSAR Estimation)
Crustacea	EC50	Water flea (Daphnia magna)	1.5 mg/l, 48 Hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

DIETHYL ETHER	0.89
Heptane	4.66

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Consult authorities before disposal. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1013
UN proper shipping name	Carbon dioxide
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Label(s)	2.2
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Packaging exceptions	306
Packaging non bulk	302, 304
Packaging bulk	302, 314, 315

IATA

UN number	UN1013
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UN proper shipping name Carbon dioxide
Transport hazard class(es)
Class 2.2
Subsidiary risk -
Packing group Not applicable.
Environmental hazards Yes
ERG Code 2L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Other information
Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.

IMDG

UN number UN1013
UN proper shipping name CARBON DIOXIDE
Transport hazard class(es)
Class 2.2
Subsidiary risk -
Packing group Not applicable.
Environmental hazards
Marine pollutant Yes
EmS F-C, S-V
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

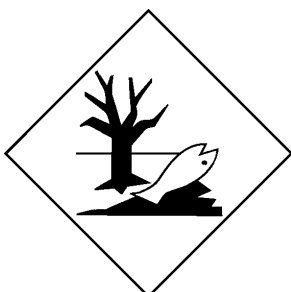
DOT



IATA; IMDG



Marine pollutant



General information

DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

DIETHYL ETHER (CAS 60-29-7)

Listed.

Heptane (CAS 142-82-5)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - Yes

Pressure Hazard - Yes

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

DIETHYL ETHER (CAS 60-29-7)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

DIETHYL ETHER (CAS 60-29-7)

6584

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

DIETHYL ETHER (CAS 60-29-7)

35 %WV

DEA Exempt Chemical Mixtures Code Number

DIETHYL ETHER (CAS 60-29-7)

6584

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

CARBON DIOXIDE (CAS 124-38-9)

DIETHYL ETHER (CAS 60-29-7)

Distillates (petroleum), Solvent-refined Light Paraffinic (CAS 64741-89-5)

Heptane (CAS 142-82-5)

US. New Jersey Worker and Community Right-to-Know Act

CARBON DIOXIDE (CAS 124-38-9)

DIETHYL ETHER (CAS 60-29-7)

Heptane (CAS 142-82-5)

US. Pennsylvania Worker and Community Right-to-Know Law

CARBON DIOXIDE (CAS 124-38-9)

DIETHYL ETHER (CAS 60-29-7)

Distillates (petroleum), Solvent-refined Light Paraffinic (CAS 64741-89-5)

Heptane (CAS 142-82-5)

US. Rhode Island RTK

DIETHYL ETHER (CAS 60-29-7)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	02-27-2015
Revision date	03-20-2015
Version #	02
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.
Bibliography	Not available.