* * * Section 1 - PRODUCT AND COMPANY IDENTIFICATION* * *

Material Name: Quick Start Ether Cylinders

Manufacturer's Part Number: LP-525 (8 oz); LP-535 (18 oz); LP-545 (22 oz)

Manufacturer Information

Quick Start Products & Solutions
770 Wiscold Drive
Rochelle, IL 61068

Phone: 1-815-562-5414

Emergency # 1-800-424-9300 CHEMTREC

Chemical Family

ethers, aliphatic hydrocarbons

Product Use

Starting fluid

* * * Section 2 - HAZARDS IDENTIFICATION* * *

EMERGENCY OVERVIEW

Physical Form: liquid
Odor: ether
Health Hazards: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, aspiration hazard
Physical Hazards: Flammable gas. May cause flash fire. May form peroxides during prolonged storage.

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, nausea, vomiting, headache, drowsiness, symptoms of drunkenness
Long Term: same as effects reported in short term exposure, brain damage, nerve damage

Skin

Short Term: irritation
Long Term: same as effects reported in short term exposure

Eye

Short Term: irritation
Long Term: same as effects reported in short term exposure

Ingestion

Short Term: nausea, vomiting, drowsiness, symptoms of drunkenness, aspiration hazard
Long Term: no information on significant adverse effects

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

* * * Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS* * *

CAS	Component	Percent
60-29-7	Diethyl ether	40-70
142-82-5	n-Heptane	30-60
124-38-9	Carbon dioxide	7-13
8032-89-5	Petroleum distillates, solvent-refined light paraffinic	0.1-1

* * * Section 4 - FIRST AID MEASURES* * *

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

Contact local poison control center or physician immediately.

* * * Section 5 - FIRE FIGHTING MEASURES* * *

See Section 9 for Flammability Properties

NFPA Ratings: Health: 2 **Fire:** 4 **Reactivity:** 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Flammable Properties

Severe fire hazard. Severe explosion hazard. Pressurized containers may rupture or explode if exposed to sufficient heat. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Electrostatic charges may be generated by flow, agitation, etc. May form explosive peroxides.

Extinguishing Media

alcohol-resistant foam, carbon dioxide, regular dry chemical, water, alcohol-resistant foam

Large fires: Use alcohol-resistant foam or flood with fine water spray.

Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

* * * Section 6 - ACCIDENTAL RELEASE MEASURES* * *

Occupational spill/release

Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. **Small spills:** Absorb with sand or other non-combustible material. **Large spills:** Keep unnecessary people away, isolate hazard area and deny entry. Dike for later disposal. Stay upwind and keep out of low areas. Collect spilled material in appropriate container for disposal. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

* * * Section 7 - HANDLING AND STORAGE* * *

Handling Procedures

Avoid breathing vapors. Avoid prolonged or repeated contact with skin or eyes. See Section 8 for personal protection information.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Do not store above 120 F (48 C). Protect from physical damage. Store outside or in a detached building. Store with flammable liquids. Keep separated from incompatible substances. Grounding and bonding required. Provide fire protection and spill control systems suitable for the hazards of the material. May form peroxides during prolonged storage. Do not puncture container. Keep separated from incompatible substances.

* * * Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION* * *

Component Exposure Limits

Diethyl ether (60-29-7)

ACGIH:	400 ppm TWA
	500 ppm STEL
OSHA (Final):	400 ppm TWA; 1200 mg/m3 TWA
OSHA (Vacated):	400 ppm TWA; 1200 mg/m3 TWA
	500 ppm STEL; 1500 mg/m3 STEL
Alberta:	400 ppm TWA; 1210 mg/m3 TWA
	500 ppm STEL; 1520 mg/m3 STEL
British Columbia:	400 ppm TWA
	500 ppm STEL
Manitoba:	400 ppm TWA
	500 ppm STEL
New Brunswick:	400 ppm TWA; 1210 mg/m3 TWA
	500 ppm STEL; 1520 mg/m3 STEL
NW Territories:	400 ppm TWA; 1213 mg/m3 TWA
	500 ppm STEL; 1516 mg/m3 STEL
Nova Scotia:	400 ppm TWA
	500 ppm STEL
Nunavut:	400 ppm TWA; 1213 mg/m3 TWA
	500 ppm STEL; 1516 mg/m3 STEL
Ontario:	400 ppm TWA
	500 ppm STEL
Quebec:	400 ppm TWAEV; 1210 mg/m3 TWAEV
	500 ppm STEV; 1520 mg/m3 STEV
Saskatchewan:	400 ppm TWA
	500 ppm STEL
Yukon:	400 ppm TWA; 1200 mg/m3 TWA
	500 ppm STEL; 1500 mg/m3 STEL

n-Heptane (142-82-5)

ACGIH:	400 ppm TWA
	500 ppm STEL
OSHA (Final):	500 ppm TWA; 2000 mg/m3 TWA
OSHA (Vacated):	400 ppm TWA; 1600 mg/m3 TWA
	500 ppm STEL; 2000 mg/m3 STEL
NIOSH:	85 ppm TWA; 350 mg/m3 TWA
	440 ppm Ceiling (15 min); 1800 mg/m3 Ceiling (15 min)
Alberta:	400 ppm TWA; 1640 mg/m3 TWA

	500 ppm STEL; 2050 mg/m3 STEL
British Columbia:	400 ppm TWA
	500 ppm STEL
Manitoba:	400 ppm TWA
	500 ppm STEL
New Brunswick:	400 ppm TWA; 1640 mg/m3 TWA
	500 ppm STEL; 2050 mg/m3 STEL
NW Territories:	400 ppm TWA; 1640 mg/m3 TWA
	500 ppm STEL; 2049 mg/m3 STEL
Nova Scotia:	400 ppm TWA
	500 ppm STEL
Nunavut:	400 ppm TWA; 1640 mg/m3 TWA
	500 ppm STEL; 2049 mg/m3 STEL
Ontario:	400 ppm TWA
	500 ppm STEL
Quebec:	400 ppm TWAEV; 1640 mg/m3 TWAEV
	500 ppm STEV; 2050 mg/m3 STEV
Saskatchewan:	400 ppm TWA
	500 ppm STEL
Yukon:	400 ppm TWA; 1600 mg/m3 TWA
	500 ppm STEL; 2000 mg/m3 STEL

Carbon dioxide (124-38-9)

ACGIH:	5000 ppm TWA
	30000 ppm STEL
OSHA (Final):	5000 ppm TWA; 9000 mg/m3 TWA
OSHA (Vacated):	10000 ppm TWA; 18000 mg/m3 TWA
	30000 ppm STEL; 54000 mg/m3 STEL
NIOSH:	5000 ppm TWA; 9000 mg/m3 TWA
	30000 ppm STEL; 54000 mg/m3 STEL
Alberta:	5000 ppm TWA; 9000 mg/m3 TWA
	30000 ppm STEL; 54000 mg/m3 STEL
British Columbia:	5000 ppm TWA
	15000 ppm STEL
Manitoba:	5000 ppm TWA
	30000 ppm STEL
New Brunswick:	5000 ppm TWA; 9000 mg/m3 TWA
	30000 ppm STEL; 54000 mg/m3 STEL
NW Territories:	5000 ppm TWA; 9000 mg/m3 TWA
	15000 ppm STEL; 27000 mg/m3 STEL
Nova Scotia:	5000 ppm TWA
	30000 ppm STEL
Nunavut:	5000 ppm TWA; 9000 mg/m3 TWA
	15000 ppm STEL; 27000 mg/m3 STEL
Ontario:	5000 ppm TWA
	30000 ppm STEL
Quebec:	5000 ppm TWAEV; 9000 mg/m3 TWAEV
	30000 ppm STEV; 54000 mg/m3 STEV
Saskatchewan:	5000 ppm TWA
	30000 ppm STEL
Yukon:	5000 ppm TWA; 9000 mg/m3 TWA
	15000 ppm STEL; 27000 mg/m3 STEL

.tilation

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Safety glasses or goggles are recommended when there is a potential for eye contact. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Protective Clothing

Wear appropriate chemical resistant clothing.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Respiratory Protection

A NIOSH approved respirator with organic vapor cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure.

* * * Section 9 - PHYSICAL AND CHEMICAL PROPERTIES* * *

Physical State:	Liquid	**Appearance:**	clear
Physical Form:	liquid	**Odor:**	ether
Odor Threshold:	Not available	**pH:**	Not available
Melting Point:	-116.3 °C	**Boiling Point:**	34.6 °C
Flash Point:	-49 °C	**Evaporation Rate:**	>1
SHA Flammability Class:	IA	**Vapor Pressure:**	537 mmHg
Vapor Density (air = 1):	>1	**Bulk Density:**	7134 g/cm3
Density:	Not available	**Specific Gravity (water = 1):**	0.7
Water Solubility:	6.9 %	**Coeff. Water/Oil Dist:**	Not available
Auto Ignition:	160 °C	**Viscosity:**	Not available
Volatility:	100 %	**Molecular Weight:**	74.12

* * * Section 10 - STABILITY AND REACTIVITY* * *

Chemical Stability

May form explosive peroxides. Avoid prolonged storage or contact with air, light or storage and use above room temperature.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Prolonged storage above 120°F.

Materials to Avoid

Avoid nitric plus acetic acid, nitric plus sulfuric acid, and strong oxidizing agents.

Decomposition Products

oxides of carbon

Possibility of Hazardous Reactions

Will not polymerize.

* * * Section 11 - TOXICOLOGICAL INFORMATION* * *

Acute and Chronic Toxicity

Acute inhalation exposure may cause irritation and central nervous system effects. Aspiration hazard: breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Diethyl ether (60-29-7)

Oral LD50 Rat 1215 mg/kg; Dermal LD50 Rabbit >20 mL/kg

n-Heptane (142-82-5)

Inhalation LC50 Rat 103 g/m3 4 h; Oral LD50 Mouse 5000 mg/kg; Dermal LD50 Rabbit 3000 mg/kg

Petroleum distillates, solvent-refined light paraffinic (64741-89-5)

Inhalation LC50 Rat 2.18 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Irritation

May cause moderate eye irritation. Irritation symptoms may include burning sensation, tearing, redness and swelling May cause irritation of the skin. Repeated or prolonged contact may result in irritation and dermatitis due to the defatting action on the skin.

Medical Conditions Aggravated by Exposure

respiratory disorders, skin disorders and allergies

* * * Section 12 - ECOLOGICAL INFORMATION* * *

ıponent Analysis - Aquatic Toxicity

Diethyl ether (60-29-7)

Fish: 96 Hr LC50 Pimephales promelas: 2560 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: >10000 mg/L [static]

Invertebrate: 24 Hr EC50 Daphnia magna: 165 mg/L

n-Heptane (142-82-5)

Fish: 96 Hr LC50 Cichlid fish: 375.0 mg/L

Invertebrate: 24 Hr EC50 Daphnia magna: >10 mg/L

Petroleum distillates, solvent-refined light paraffinic (64741-89-5)

Fish: 96 Hr LC50 Oncorhynchus mykiss: >5000 mg/L

Invertebrate: 48 Hr EC50 Daphnia magna: >1000 mg/L

* * * Section 13 - DISPOSAL CONSIDERATIONS* * *

Disposal Methods

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

Component Waste Numbers

Diethyl ether (60-29-7)

RCRA: waste number U117 (Ignitable waste)

* * * Section 14 - TRANSPORT INFORMATION* * *

US DOT Information

Shipping Name: Compressed gas, flammable, n.o.s. (Contains: Diethyl ether, Carbon dioxide)

UN/NA #: UN1954 **Hazard Class:** 2.1
Required Label(s): FLAMMABLE

TDG Information

Shipping Name: Compressed gas, flammable, n.o.s. (Contains: Diethyl ether, Carbon dioxide)
UN #: UN1954 **Hazard Class:** 2.1
Required Label(s): FLAMMABLE

* * * Section 15 - REGULATORY INFORMATION* * *

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Diethyl ether (60-29-7)

CERCLA: 100 lb final RQ; 45.4 kg final RQ

n-Heptane (142-82-5)

TSCA 12b: Section 4, 1 % de minimus concentration

SARA 311/312

Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** Yes **Reactive:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Diethyl ether	60-29-7	Yes	Yes	Yes	Yes	Yes	Yes
n-Heptane	142-82-5	Yes	Yes	Yes	Yes	Yes	Yes
Carbon dioxide	124-38-9	Yes	Yes	Yes	Yes	Yes	Yes
Petroleum distillates, solvent-refined light paraffinic	64741-89-5	No	Yes	No	No	No	No

Not regulated under California Proposition 65

Canada

This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS CLASSIFICATION: A, B1, D2B.

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which fall under WHMIS criteria specified in the Controlled Products Regulations and present above the threshold limits listed on the IDL.

Diethyl ether (60-29-7)

1 %

n-Heptane (142-82-5)

1 %

Carbon dioxide (124-38-9)

1 %

Component Analysis - Inventory

Component	CAS	US	CA
Diethyl ether	60-29-7	Yes	DSL
n-Heptane	142-82-5	Yes	DSL
Carbon dioxide	124-38-9	Yes	DSL
Petroleum distillates, solvent-refined light paraffinic	64741-89-5	Yes	DSL

* * * Section 16 - OTHER INFORMATION* * *

Other Information

Quick Start Products & Solutions, Inc. believes that the information contained herein is accurate and reliable as of the date of this material safety data sheet, but no representation guarantee or warranty, expressed or implied, is made as to the accuracy, reliability, or completeness of the information. Persons receiving this information are encouraged to make their own determination as to the information's suitability and completeness for their particular application. NO INFORMATION CONTAINED HEREIN CONSTITUTES A PRODUCT WARRANTY OF ANY KIND, WHETHER EXPRESSED OR IMPLIED; AND ALL IMPLIED WARRANTIES OF MERCHANT ABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY QUICK START PRODUCTS & SOLUTIONS, INC.

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

End of Sheet QS-001