SAFETY DATA SHEET

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Valvoline™ EXTRA STRENGTH STARTING FLUID
602373

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland P.O. Box 2219 Columbus, OH 43216	Regulatory Information Number Telephone Emergency telephone number	1-800-325-3751 614-790-3333 1-800-ASHLAND (1-800-274-5263)

Product name: Valvoline™ EXTRA STRENGTH STARTING FLUID

Product code: 602373

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: aerosol, colourless

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CONTENTS UNDER PRESSURE. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY THE SKIN AND CAUSE IRRITATION AND BURNS.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact

Can cause severe eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure eye tissue.

Skin contact

May cause slight skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, Skin, lung (for example, asthma-like conditions), Liver, Central nervous system, male reproductive system, Individuals with preexisting heart disorders maybe more susceptible to arrhythmias (irregular heartbeats) if exposed to high concentrations of this material.

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Cough, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), loss of appetite, respiratory depression (slowing of the breathing rate), Lack of coordination, confusion, irregular heartbeat, respiratory failure, coma

Target Organs

This product contains ethanol. Alcoholic beverage consumption has been associated with brain damage, heart damage, and pancreatitis in humans. The relevance of these findings to ethanol exposure in industrial environments is uncertain., Exposure to this material (or a component) has been found to cause kidney damage in male rats. The mechanism by which this toxicity occurs is specific to the male rat and the kidney effects are not expected to occur in humans., Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:, pancreatic damage, liver damage, brain damage, testis damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans:, liver damage

Carcinogenicity

Ethyl chloride has been shown to cause cancer in laboratory animals. The relevance of this finding to humans is uncertain. This product contains ethanol. The International Agency for Research on Cancer (IARC) has determined that exposure to ethanol through chronic human consumption of

alcoholic beverages can cause cancer. The relevance of this finding to ethanol exposure in industrial environments is uncertain.

Reproductive hazard

This product contains ethanol. Alcoholic beverage consumption has been associated with birth defects in humans. The relevance of this finding to ethanol exposure in industrial environments is uncertain.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components	CAS-No. / Trade Secret No.	Concentration
SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	64742-89-8	>=60-<70%
ETHYL ETHER	60-29-7	>=20-<30%
CARBON DIOXIDE	124-38-9	>=1.5-<5%
ETHANOL	64-17-5	>=1.5-<5%
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT NAPHTHENIC	64742-53-6	>=0.5-<1%
ETHYL CHLORIDE	75-00-3	>=0.1-<0.5%

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison

control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician

Hazards: Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 2 - Swallowing) when deciding whether to induce vomiting. Acute aspiration of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of small quantities of mineral oil can produce chronic inflammation of the lungs (i.e. lipoid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

Treatment: Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Water spray, Carbon dioxide (CO2), Foam, Dry chemical

Hazardous combustion products

Aldehydes, carbon dioxide and carbon monoxide, formaldehyde-like, Hydrocarbons, organic compounds

Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquids Classification
not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
For personal protection see section 8. Eliminate all sources of ignition such as flares, flames (including pilot lights), and electrical sparks. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions
Do not flush into surface water or sanitary sewer system.

Methods for cleaning up
Suppress (knock down) gases/vapours/mists with a water spray jet. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Other information
Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling
Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage
Do not store near extreme heat, open flame, or sources of ignition. Maximum recommended storage temperature 50 degrees C (122 degrees F). Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC		**64742-89-8**
OSHA Z1	time weighted average	500 ppm
ACGIH	time weighted average	300 ppm
OSHA Z1	time weighted average	2,000 mg/m3
ACGIH	time weighted average	1,370 mg/m3
ETHYL ETHER		**60-29-7**
ACGIH	time weighted average	400 ppm
ACGIH	Short term exposure limit	500 ppm
OSHA Z1	Permissible exposure limit	400 ppm
OSHA Z1	Permissible exposure limit	1,200 mg/m3
CARBON DIOXIDE		**124-38-9**
ACGIH	time weighted average	5,000 ppm
ACGIH	Short term exposure limit	30,000 ppm
NIOSH	Recommended exposure limit (REL):	5,000 ppm
NIOSH	Recommended exposure limit (REL):	9,000 mg/m3
NIOSH	Short term exposure limit	30,000 ppm
NIOSH	Short term exposure limit	54,000 mg/m3
OSHA Z1	Permissible exposure limit	5,000 ppm
OSHA Z1	Permissible exposure limit	9,000 mg/m3
ETHANOL		**64-17-5**
NIOSH	Recommended exposure limit (REL):	1,000 ppm
NIOSH	Recommended exposure limit (REL):	1,900 mg/m3
OSHA Z1	Permissible exposure limit	1,000 ppm
OSHA Z1	Permissible exposure limit	1,900 mg/m3
ACGIH	Short term exposure limit	1,000 ppm

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist. Maintain eye wash station near work area.

Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.
Wear resistant gloves (consult your safety equipment supplier).

Respiratory protection

Respiratory protection is not required under normal conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	aerosol
Colour	colourless
Odour	ether-like
Boiling point/boiling range	94.3 °F / 34.6 °C @ 1,013.23 hPa Calculated Phase Transition Liquid/Gas
Flash point	-49 °F / -45 °C Calculated Flash Point
Lower explosion limit/Upper explosion limit	1.05 %(V) / 36.5 %(V)
Vapour pressure	717.261 hPa @ 77 °F / 25 °C Calculated Vapor Pressure
Density	0.706 g/cm3 @ 60.01 °F / 15.56 °C

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Heat, flames and sparks.

Incompatible products

Acids, Alkali metals, Ammonia, Bases, halogens, Oxidizing agents, sodium, Sulphur compounds

Hazardous decomposition products

Aldehydes, carbon dioxide and carbon monoxide, formaldehyde-like, Hydrocarbons, organic compounds

Hazardous reactions

Product will not undergo hazardous polymerization.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

Acute oral toxicity - Product	: no data available

Acute oral toxicity - Components

SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	: LD 50: > 8,000 mg/kg Species: Rat
ETHYL ETHER	: LD 50: 3,230 - 3,920 mg/kg Species: Rat
ETHANOL	: LD 50: 7,060 mg/kg Species: Rat
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT NAPHTHENIC	: LD 50: > 5 g/kg Species: Rat

Acute inhalation toxicity

Acute inhalation toxicity - Product	: no data available

Acute inhalation toxicity - Components

SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	: LC 50: 3400 ppm Exposure time: 4 h Species: Rat
ETHYL ETHER	: LC 50: 32,000 mg/l Exposure time: 4 h Species: Rat

ETHANOL	:	LC 50: 117 - 125 mg/l Exposure time: 4 h Species: Rat
ETHYL CHLORIDE	:	LC 50: > 19000 ppm Exposure time: 4 h Species: Rat Method: OECD Test Guideline 403

Acute dermal toxicity

Acute dermal toxicity - Product	:	no data available

Acute dermal toxicity - Components

SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	:	LD 50: > 4,000 mg/kg Species: Rat
ETHANOL	:	LD Lo: 20 g/kg Species: Rabbit
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT NAPHTHENIC	:	LD 50: > 2,000 mg/kg Species: Rabbit

Acute toxicity (other routes of administration)

Acute toxicity (other routes of administration)	:	no data available

12. ECOLOGICAL INFORMATION

Biodegradability

Biodegradability - Product	:	no data available

Biodegradability - Components

ETHYL CHLORIDE	:	0 % Method: Closed Bottle test Remarks: Not readily biodegradable.

Bioaccumulation

Bioaccumulation - Product	:	no data available

Ecotoxicity effects

Toxicity to fish

Toxicity to fish - Product	:	no data available

Toxicity to fish - Components

ETHANOL	:	LC 50: 12,000 - 16,000 mg/l Exposure time: 96 h Species: Rainbow trout,donaldson trout (Oncorhynchus mykiss) Test Type: static test

Toxicity to daphnia and other aquatic invertebrates

Toxicity to daphnia and other aquatic invertebrates - Product	:	no data available

Toxicity to daphnia and other aquatic invertebrates - Components

ETHANOL	:	EC 50: > 10,000 mg/l Exposure time: 48 h Species: Water flea (Daphnia magna) Test Type: static test

ETHYL CHLORIDE	:	LC 50: 58 mg/l Exposure time: 48 h Species: Water flea (Daphnia hyalina) Test Type: static test

Toxicity to algae

Toxicity to algae - Product	:	no data available

Toxicity to algae - Components

ETHYL CHLORIDE	:	118 mg/l Exposure time: 72 h Species: Desmodesmus subspicatus (green algae) Test Type: static test

Toxicity to bacteria

Toxicity to bacteria - Product	:	no data available

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

U.S. DOT - ROAD

	ORM-D, CONSUMER COMMODITY	ORM			

U.S. DOT - RAIL

	ORM-D, CONSUMER COMMODITY	ORM			

U.S. DOT - INLAND WATERWAYS

	ORM-D, CONSUMER COMMODITY	ORM			

TRANSPORT CANADA - ROAD

UN	1950	AEROSOLS	2.1		LIMITED QUANTITY

TRANSPORT CANADA - RAIL

UN	1950	AEROSOLS	2.1		LIMITED QUANTITY

TRANSPORT CANADA - INLAND WATERWAYS

UN	1950	AEROSOLS	2.1	LIMITED QUANTITY

INTERNATIONAL MARITIME DANGEROUS GOODS

UN	1950	AEROSOLS	2.1	MARINE POLLUTANT: (ALIPHATIC PETROLEUM NAPHTHA)LIMITED QUANTITY

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1950	Aerosols, flammable (engine starting fluid)	2.1

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1950	Aerosols, flammable (engine starting fluid)	2.1

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1950	AEROSOLES	2

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment.	

SARA Hazard Classification
SARA 311/312 Classification

Acute Health Hazard

Fire Hazard Sudden Release of Pressure Hazard Chronic Health Hazard

SARA 313 Component(s)

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.

New Jersey RTK Label Information

SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	64742-89-8
ETHYL ETHER	60-29-7
CARBON DIOXIDE	124-38-9
ETHANOL	64-17-5
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT NAPHTHENIC	64742-53-6
TOLUENE	108-88-3

Pennsylvania RTK Label Information

SOLVENT NAPHTHA (PETROLEUM), LIGHT ALIPHATIC	64742-89-8
ETHYL ETHER	60-29-7
CARBON DIOXIDE	124-38-9
ETHANOL	64-17-5

Notification status

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	y (positive listing)
Japan. Kashin-Hou Law List	n (Negative listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)

Reportable quantity - Product

US. EPA CERCLA Hazardous Substances (40 CFR 302)	340 lbs

Reportable quantity-Components

ETHYL ETHER	60-29-7	100 lbs

	HMIS	NFPA
Health	2	1
Flammability	4	4
Physical hazards	0	
Instability		0
Specific Hazard	--	--

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).