Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ STAMARK™ Surface Preparation Adhesive P-50

Product Identification Numbers

ID Number	UPC	ID Number	UPC
LE-N100-3101-4		41-3400-0267-8	
75-0300-1882-6	00-51138-38540-8	75-0300-2558-1	00-51138-57141-2

7000004817, 4010030614, 7000004818

1.2. Recommended use and restrictions on use

Recommended use
Pavement marking tape adhesive, Pavement marking adhesive

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Commercial Branding and Transportation Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Flammable Liquid: Category 2.
Serious Eye Damage/Irritation: Category 2A.
Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements
Signal word
Danger

Symbols
Flame |Exclamation mark |Health Hazard |

Pictograms



Hazard Statements
Highly flammable liquid and vapor.

Causes serious eye irritation.
May damage fertility or the unborn child.
May cause drowsiness or dizziness.

Precautionary statements

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical, ventilating and lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Avoid breathing vapors.
Wash exposed skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves, eye protection, face protection, and if needed, respiratory protection (see SDS Section 8).

Response:
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Call a POISON CENTER or doctor.
If eye irritation persists: Get medical advice.
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal:
Dispose of contents and container in accordance with applicable local, regional, national, and international regulations.

1% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Ethyl acetate	141-78-6	15 - 40 Trade Secret *

Methyl ethyl ketone	78-93-3	15 - 40 Trade Secret *
1,3-Pentadiene, polymer with 1-butene, (2E)-2-butune, (2Z)-2-Butene, cyclopentene and 2-methyl-1-propene	220543-67-9	7 - 13
Heptane, branched, cyclic and linear	426260-76-6	5 - 10 Trade Secret *
Styrene - isoprene copolymer	25038-32-8	5 - 10
Heptane	142-82-5	1 - 5 Trade Secret *
Hydrotreated heavy naphthenic petroleum distillates	64742-52-5	0.5 - 1.5 Trade Secret *
Terpenes and Terpenoids, turpentine-oil, .alpha.-pinene fraction, polymd.	70750-57-1	0.5 - 1.5
Toluene	108-88-3	0.1 - 1 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

4.3. Indication of any immediate medical attention and special treatment required
Not applicable.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes	During Combustion
Hydrocarbons	During Combustion
Methane	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Ketones	During Combustion
Toxic Vapor, Gas, Particulate	During Combustion

5.3. Special protective actions for fire-fighters
Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Cover spill area with a fire-extinguishing foam. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. Use personal protective equipment (gloves, respirators, etc.) as required. To minimize the risk of ignition, determine applicable electrical classifications for the process using this product and select specific local exhaust ventilation equipment to avoid flammable vapor accumulation. Ground/bond container and receiving equipment if there is potential for static electricity accumulation during transfer.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Ototoxicant
Toluene	108-88-3	OSHA	TWA:200 ppm;CEIL:300 ppm	
Ethyl acetate	141-78-6	ACGIH	TWA:400 ppm	
Ethyl acetate	141-78-6	OSHA	TWA:1400 mg/m3(400 ppm)	
Heptane	142-82-5	OSHA	TWA:2000 mg/m3(500 ppm)	
Heptane, straight and branched isomers	142-82-5	ACGIH	TWA:200 ppm;STEL:400 ppm	Ototoxicant
Heptane, straight and branched isomers	426260-76-6	ACGIH	TWA:200 ppm;STEL:400 ppm	Ototoxicant
OIL MIST (MINERAL)	64742-52-5	OSHA	TWA(as mist):5 mg/m3	
PETROLEUM DISTILLATES (NAPHTHA) (RUBBER SOLVENT)	64742-52-5	OSHA	TWA:2000 mg/m3(500 ppm)	
Methyl ethyl ketone	78-93-3	ACGIH	TWA:75 ppm;STEL:150 ppm	Danger of cutaneous absorption
Methyl ethyl ketone	78-93-3	OSHA	TWA:590 mg/m3(200 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety Glasses with side shields
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

For prolonged or repeated contact, gloves made from the following material(s) are recommended (breakthrough times are >4

hours): Polyethylene, Polymer laminate, Polyvinyl Alcohol (PVA)

Any glove recommended for prolonged/repeated contact is also suitable for short-term/splash contact.

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Color	Light Yellow
Odor	Moderate Solvent
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	>=76.7 ºC
Flash Point	-9.4 ºC [*Test Method:*Tagliabue Closed Cup]
Evaporation rate	>=4.3 [*Ref Std:*BUOAC=1]
Flammability	Flammable Liquid: Category 2.
Flammable Limits(LEL)	1.2 %
Flammable Limits(UEL)	11 %
Vapor Pressure	<=76 mmHg [@ 68 ºF]
Relative Vapor Density	2.4 - 3.5 [*Ref Std:*AIR=1]
Density	0.68 - 0.9 g/ml [@ 20 ºC]
Relative Density	0.68 - 0.9 [*Ref Std:*WATER=1]
Water solubility	Slight (less than 10%)
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	55.6 mm2/sec
Volatile Organic Compounds	745 - 755 g/l
Percent volatile	75 - 85 % weight
VOC Less H2O & Exempt Solvents	*Not Applicable*
Molecular weight	*No Data Available*

Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Sparks and/or flames

10.5. Incompatible materials
Strong acids

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:
Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Methyl ethyl ketone	Dermal	Rabbit	LD50 > 8,050 mg/kg
Methyl ethyl ketone	Inhalation-Vapor (4 hours)	Rat	LC50 34.5 mg/l
Methyl ethyl ketone	Ingestion	Rat	LD50 2,737 mg/kg
Ethyl acetate	Dermal	Rabbit	LD50 > 18,000 mg/kg
Ethyl acetate	Inhalation-Vapor (4 hours)	Rat	LC50 70.5 mg/l
Ethyl acetate	Ingestion	Rat	LD50 5,620 mg/kg
1,3-Pentadiene, polymer with 1-butene, (2E)-2-butune, (2Z)-2-Butene, cyclopentene and 2-methyl-1-propene	Ingestion	Rat	LD50 > 2,000 mg/kg
1,3-Pentadiene, polymer with 1-butene, (2E)-2-butune, (2Z)-2-Butene, cyclopentene and 2-methyl-1-propene	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
Heptane, branched, cyclic and linear	Dermal	Rabbit	LD50 > 2,920 mg/kg
Heptane, branched, cyclic and linear	Inhalation-Vapor (4 hours)	Rat	LC50 > 23.3 mg/l
Heptane, branched, cyclic and linear	Ingestion	Rat	LD50 > 5,840 mg/kg
Styrene - isoprene copolymer	Dermal	Not available	LD50 > 2,000 mg/kg
Styrene - isoprene copolymer	Ingestion	Not available	LD50 > 2,000 mg/kg
Heptane	Dermal	similar compounds	LD50 > 2,000 mg/kg
Heptane	Inhalation-Vapor (4 hours)	similar compounds	LC50 > 33.5 mg/l
Heptane	Ingestion	similar compounds	LD50 > 5,000 mg/kg
Hydrotreated heavy naphthenic petroleum distillates	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hydrotreated heavy naphthenic petroleum distillates	Ingestion	Rat	LD50 > 5,000 mg/kg
Terpenes and Terpenoids, turpentine-oil, .alpha.-pinene fraction, polymd.	Dermal	Rat	LD50 > 2,000 mg/kg
Terpenes and Terpenoids, turpentine-oil, .alpha.-pinene fraction, polymd.	Ingestion	Rat	LD50 > 5,000 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation-Vapor (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Methyl ethyl ketone	Rabbit	Minimal irritation
Ethyl acetate	Rabbit	Minimal irritation
1,3-Pentadiene, polymer with 1-butene, (2E)-2-butune, (2Z)-2-Butene, cyclopentene and 2-methyl-1-propene	In vitro data	No significant irritation

Heptane, branched, cyclic and linear	Rabbit	Irritant
Styrene - isoprene copolymer	Professional judgement	No significant irritation
Heptane	Professional judgement	Mild irritant
Hydrotreated heavy naphthenic petroleum distillates	Rabbit	Minimal irritation
Terpenes and Terpenoids, turpentine-oil, .alpha.-pinene fraction, polymd.	In vitro data	No significant irritation
Toluene	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value
Methyl ethyl ketone	Rabbit	Severe irritant
Ethyl acetate	Rabbit	Mild irritant
1,3-Pentadiene, polymer with 1-butene, (2E)-2-butune, (2Z)-2-Butene, cyclopentene and 2-methyl-1-propene	In vitro data	No significant irritation
Heptane, branched, cyclic and linear	Rabbit	Mild irritant
Styrene - isoprene copolymer	Professional judgement	No significant irritation
Heptane	similar compounds	Mild irritant
Hydrotreated heavy naphthenic petroleum distillates	Rabbit	Mild irritant
Terpenes and Terpenoids, turpentine-oil, .alpha.-pinene fraction, polymd.	Rabbit	No significant irritation
Toluene	Rabbit	Moderate irritant

Skin Sensitization

Name	Species	Value
Ethyl acetate	Guinea pig	Not classified
1,3-Pentadiene, polymer with 1-butene, (2E)-2-butune, (2Z)-2-Butene, cyclopentene and 2-methyl-1-propene	Mouse	Not classified
Heptane, branched, cyclic and linear	Guinea pig	Not classified
Styrene - isoprene copolymer		Not classified
Heptane	similar compounds	Not classified
Hydrotreated heavy naphthenic petroleum distillates	Guinea pig	Not classified
Terpenes and Terpenoids, turpentine-oil, .alpha.-pinene fraction, polymd.	Mouse	Not classified
Toluene	Guinea pig	Not classified

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Methyl ethyl ketone	In Vitro	Not mutagenic
Ethyl acetate	In Vitro	Not mutagenic
Ethyl acetate	In vivo	Not mutagenic
1,3-Pentadiene, polymer with 1-butene, (2E)-2-butune, (2Z)-2-Butene, cyclopentene and 2-methyl-1-propene	In Vitro	Not mutagenic
Heptane, branched, cyclic and linear	In Vitro	Not mutagenic

Heptane	In Vitro	Not mutagenic
Terpenes and Terpenoids, turpentine-oil, .alpha.-pinene fraction, polymd.	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Methyl ethyl ketone	Inhalation	Human	Not carcinogenic
Hydrotreated heavy naphthenic petroleum distillates	Ingestion	Rat	Not carcinogenic
Hydrotreated heavy naphthenic petroleum distillates	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Methyl ethyl ketone	Inhalation	Not classified for development	Rat	LOAEL 8.8 mg/l	during gestation
Heptane, branched, cyclic and linear	Not Specified	Not classified for female reproduction	Rat	NOAEL Not available	2 generation
Heptane, branched, cyclic and linear	Not Specified	Not classified for male reproduction	Rat	NOAEL Not available	2 generation
Heptane, branched, cyclic and linear	Not Specified	Not classified for development	Rat	NOAEL Not available	2 generation
Terpenes and Terpenoids, turpentine-oil, .alpha.-pinene fraction, polymd.	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Methyl ethyl ketone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	official classification	NOAEL Not available	
Methyl ethyl ketone	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Methyl ethyl ketone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
Methyl ethyl ketone	Ingestion	liver	Not classified	Rat	NOAEL Not available	not applicable
Methyl ethyl ketone	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 1,080 mg/kg	not applicable
Ethyl acetate	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Ethyl acetate	Inhalation	respiratory irritation	Some positive data exist, but the	Human	NOAEL Not	

			data are not sufficient for classification		available	
Ethyl acetate	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Heptane, branched, cyclic and linear	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Heptane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Heptane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Heptane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Hydrotreated heavy naphthenic petroleum distillates	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Methyl ethyl ketone	Dermal	nervous system	Not classified	Guinea pig	NOAEL Not available	31 weeks
Methyl ethyl ketone	Inhalation	liver	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Inhalation	heart	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Inhalation	endocrine system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Inhalation	immune system	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Inhalation	muscles	Not classified	Rat	NOAEL 14.7 mg/l	90 days
Methyl ethyl ketone	Ingestion	liver	Not classified	Rat	NOAEL Not available	7 days
Methyl ethyl ketone	Ingestion	nervous system	Not classified	Rat	NOAEL 173 mg/kg/day	90 days
Ethyl acetate	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.043 mg/l	90 days
Ethyl acetate	Inhalation	liver	Not classified	Rat	NOAEL 0.043 mg/l	90 days
Ethyl acetate	Inhalation	nervous system	Not classified	Rat	NOAEL 0.043 mg/l	90 days
Ethyl acetate	Inhalation	hematopoietic system	Not classified	Rabbit	LOAEL 16 mg/l	40 days
Ethyl acetate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 3,600 mg/kg/day	90 days
Ethyl acetate	Ingestion	liver	Not classified	Rat	NOAEL	90 days

					3,600 mg/kg/day	
Ethyl acetate	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 3,600 mg/kg/day	90 days
Heptane	Inhalation	nervous system	Not classified	Rat	NOAEL 6.15 mg/l	30 weeks
Heptane	Inhalation	peripheral nervous system	Not classified	Rat	NOAEL 12.5 mg/l	16 weeks
Heptane	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 12.2 mg/l	26 weeks
Heptane	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 12.2 mg/l	26 weeks
Toluene	Inhalation	auditory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	eyes	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	liver	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	liver	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks

Aspiration Hazard

Name	Value
Heptane, branched, cyclic and linear	Aspiration hazard
Heptane	Aspiration hazard

Hydrotreated heavy naphthenic petroleum distillates	Aspiration hazard
Toluene	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. As a disposal alternative, utilize an acceptable permitted waste disposal facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable), D018 (Benzene), D035 (Methyl ethyl ketone)

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Flammable (gases, aerosols, liquids, or solids)

Health Hazards
Reproductive toxicity
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 2 **Flammability:** 3 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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