Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Solvent No. 2

Product Identification Numbers

ID Number	UPC	ID Number	UPC
62-5022-6530-9	00-21200-21429-5	62-5022-7530-8	00-21200-21430-1
62-5022-8530-7	00-21200-21431-8		

7010309905, 7000121461, 7000121462

1.2. Recommended use and restrictions on use

Recommended use
Solvent, Industrial use

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Industrial Adhesives and Tapes 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.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 2B.
Reproductive Toxicity: Category 1B.
Specific Target Organ Toxicity (repeated exposure): Category 1.
Specific Target Organ Toxicity (single exposure): Category 3.
Aspiration Hazard: Category 1.

2.2. Label elements

Signal word
Danger

Symbols
Flame |Exclamation mark |Health Hazard |

Pictograms



Hazard Statements
Highly flammable liquid and vapor.

Causes skin irritation.
Causes eye irritation.
May damage fertility or the unborn child.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.

Causes damage to organs through prolonged or repeated exposure: nervous system | sensory organs.

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.
Do not breathe vapors.
Wash exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
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: Immediately call a POISON CENTER or doctor.
Get medical attention if you feel unwell.
Do NOT induce vomiting.
If eye irritation persists or if skin irritation occurs: Get medical advice.
Take off contaminated clothing and wash it before reuse.
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.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Toluene	108-88-3	45 - 70 Trade Secret *
Petroleum Distillates	64741-84-0	30 - 60 Trade Secret *
Hexane	110-54-3	10 - 30 Trade Secret *
Heptane	142-82-5	4.4 - 11.2
Methylcyclopentane	96-37-7	4.4 - 11.2
2-Methylpentane	107-83-5	5 - 10 Trade Secret *
3-Methylpentane	96-14-0	5 - 10 Trade Secret *
Cyclohexane	110-82-7	< 4.5
Benzene	71-43-2	< 0.1

*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:
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:
Do not induce vomiting. Get immediate medical attention.

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

Aspiration pneumonitis (coughing, gasping, choking, burning of the mouth, and difficulty breathing). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness). Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

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
Carbon monoxide	During Combustion
Carbon dioxide	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 heat. 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
Branched Hexane Isomers	107-83-5	ACGIH	TWA:200 ppm	A3: Confirmed animal carcin.
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	
Hexane	110-54-3	ACGIH	TWA:50 ppm	Danger of cutaneous absorption
Hexane	110-54-3	OSHA	TWA:1800 mg/m3(500 ppm)	
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	OSHA	TWA:1050 mg/m3(300 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
NAPHTHA	64741-84-0	OSHA	TWA:400 mg/m3(100 ppm)	
Benzene	71-43-2	ACGIH	TWA:0.02 ppm	A1: Confirmed human carcin.,Danger of cutaneous absorption
Benzene	71-43-2	OSHA	TWA:1 ppm;TWA:10 ppm;STEL:5 ppm;CEIL:25 ppm	29 CFR 1910.1028
Branched Hexane Isomers	96-14-0	ACGIH	TWA:200 ppm	A3: Confirmed animal carcin.

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.

Gloves made from the following material(s) are recommended: Polymer laminate

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 and particulates

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	Colorless
Odor	Strong Solvent
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	>=60 ºC
Flash Point	-20 ºC [*Test Method:*Closed Cup] [*Details:*Petroleum Distillate]
Evaporation rate	4 [*Ref Std:*ETHER=1]
Flammability	Flammable Liquid: Category 2.
Flammable Limits(LEL)	1 % volume
Flammable Limits(UEL)	8 % volume
Vapor Pressure	<=15,998.6 Pa [@ 20 ºC]
Relative Vapor Density	3.1 [*Ref Std:*AIR=1]
Density	0.8 g/ml
Relative Density	0.8 [*Ref Std:*WATER=1]
Water solubility	Nil
Solubility- non-water	*Not Applicable*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	480 ºC [*Details:*Toluene]
Decomposition temperature	*No Data Available*
Kinematic Viscosity	3.1 mm2/sec
Volatile Organic Compounds	*No Data Available*
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	<=800 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Solids Content	0 % weight

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
Heat
Sparks and/or flames

10.5. Incompatible materials
Strong oxidizing agents

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:
May be harmful if inhaled.
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:
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

Eye Contact:
Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:
Chemical (Aspiration) Pneumonitis: Signs/symptoms may include coughing, gasping, choking, burning of the mouth, difficulty breathing, bluish colored skin (cyanosis), and may be fatal.

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.

Prolonged or repeated exposure may cause target organ effects:
Ocular Effects: Signs/symptoms may include blurred or significantly impaired vision.

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Peripheral Neuropathy: Signs/symptoms may include tingling or numbness of the extremities, incoordination, weakness of the hands and feet, tremors and muscle atrophy.

Olfactory Effects: Signs/symptoms may include decreased ability to detect odors and/or complete loss of smell.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:

Ingredient	CAS No.	Class Description	Regulation
Benzene	71-43-2	Known To Be Human Carcinogen.	National Toxicology Program Carcinogens
Benzene	71-43-2	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer
BENZENE	71-43-2	Cancer hazard	OSHA Carcinogens

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	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >20 - =50 mg/l
Overall product	Ingestion		No data available; calculated ATE >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
Petroleum Distillates	Dermal	Rat	LD50 > 2,800 mg/kg
Petroleum Distillates	Inhalation-Vapor (4 hours)	Rat	LC50 > 25.2 mg/l
Petroleum Distillates	Ingestion	Rat	LD50 > 5,840 mg/kg
Hexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hexane	Inhalation-Vapor (4 hours)	Rat	LC50 170 mg/l
Hexane	Ingestion	Rat	LD50 > 28,700 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
Methylcyclopentane	Inhalation-Vapor (4 hours)	Rat	LC50 > 25.3 mg/l
Methylcyclopentane	Ingestion	Rat	LD50 > 5,000 mg/kg
Methylcyclopentane	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
2-Methylpentane	Dermal		LD50 estimated to be > 5,000 mg/kg
2-Methylpentane	Inhalation-Vapor		LC50 estimated to be > 50 mg/l
2-Methylpentane	Ingestion		LD50 estimated to be > 5,000 mg/kg
3-Methylpentane	Dermal		LD50 estimated to be > 5,000 mg/kg
3-Methylpentane	Inhalation-Vapor		LC50 estimated to be > 50 mg/l
3-Methylpentane	Ingestion		LD50 estimated to be > 5,000 mg/kg
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 32.9 mg/l
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Benzene	Dermal	Multiple animal species	LD50 > 8,260 mg/kg
Benzene	Inhalation-Vapor (4 hours)	Rat	LC50 43.8 mg/l
Benzene	Ingestion	Rat	LD50 5,970 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Toluene	Rabbit	Irritant
Petroleum Distillates	Rabbit	Irritant
Hexane	Human and animal	Mild irritant
Heptane	Professional judgement	Mild irritant
Methylcyclopentane	Rabbit	No significant irritation
2-Methylpentane	Professional judgement	Mild irritant
3-Methylpentane	Professional judgement	Mild irritant
Cyclohexane	Rabbit	Mild irritant
Benzene	Rabbit	Irritant

Serious Eye Damage/Irritation

Name	Species	Value

Toluene	Rabbit	Moderate irritant
Petroleum Distillates	Rabbit	Mild irritant
Hexane	Rabbit	Mild irritant
Heptane	similar compounds	Mild irritant
Methylcyclopentane	Rabbit	Mild irritant
2-Methylpentane	Professional judgement	Moderate irritant
3-Methylpentane	Professional judgement	Moderate irritant
Cyclohexane	Rabbit	Mild irritant
Benzene	Rabbit	Severe irritant

Skin Sensitization

Name	Species	Value
Toluene	Guinea pig	Not classified
Petroleum Distillates	Guinea pig	Not classified
Hexane	Human	Not classified
Heptane	similar compounds	Not classified
Methylcyclopentane	similar compounds	Not classified
Benzene	Multiple animal species	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
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
Hexane	In Vitro	Not mutagenic
Hexane	In vivo	Not mutagenic
Heptane	In Vitro	Not mutagenic
Methylcyclopentane	In vivo	Not mutagenic
Methylcyclopentane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Benzene	In Vitro	Some positive data exist, but the data are not sufficient for classification
Benzene	In vivo	Mutagenic

Carcinogenicity

Name	Route	Species	Value
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
Hexane	Dermal	Mouse	Not carcinogenic
Hexane	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Benzene	Dermal	Mouse	Carcinogenic
Benzene	Ingestion	Multiple animal species	Carcinogenic
Benzene	Inhalation	Human	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
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
Petroleum Distillates	Ingestion	Toxic to male reproduction	similar compounds	NOAEL not available	not available
Petroleum Distillates	Inhalation	Toxic to male reproduction	similar compounds	NOAEL not available	not available
Hexane	Ingestion	Not classified for development	Mouse	NOAEL 2,200 mg/kg/day	during organogenesis
Hexane	Inhalation	Not classified for development	Rat	NOAEL 0.7 mg/l	during gestation
Hexane	Ingestion	Toxic to male reproduction	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Inhalation	Toxic to male reproduction	Rat	LOAEL 3.52 mg/l	28 days
Cyclohexane	Inhalation	Not classified for female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not classified for development	Rat	NOAEL 6.9 mg/l	2 generation
Benzene	Inhalation	Not classified for female reproduction	Rat	NOAEL 0.96 mg/l	premating into lactation
Benzene	Inhalation	Not classified for development	Rat	NOAEL 0.032 mg/l	during organogenesis
Benzene	Ingestion	Toxic to male reproduction	Rat	LOAEL 50 mg/kg/day	90 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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
Petroleum Distillates	Inhalation	central nervous system depression	May cause drowsiness or dizziness	similar compoun ds	NOAEL not available	not available
Petroleum Distillates	Ingestion	central nervous system depression	May cause drowsiness or dizziness	similar compoun ds	NOAEL not availavle	not available
Hexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Hexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL Not available	8 hours
Hexane	Inhalation	respiratory system	Not classified	Rat	NOAEL 24.6 mg/l	8 hours
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	
Methylcyclopentane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
Methylcyclopentane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
2-Methylpentane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Professio nal judgeme nt	NOAEL Not available	
2-Methylpentane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
2-Methylpentane	Inhalation	cardiac sensitization	Not classified	Dog	NOAEL Not available	
2-Methylpentane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professio nal judgeme nt	NOAEL Not available	
3-Methylpentane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Professio nal judgeme nt	NOAEL Not available	
3-Methylpentane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
3-Methylpentane	Inhalation	cardiac sensitization	Not classified	Dog	NOAEL Not available	
3-Methylpentane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professio nal judgeme nt	NOAEL Not available	
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Cyclohexane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professio nal judgeme nt	NOAEL Not available	
Benzene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not Available	
Benzene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	similar health	NOAEL Not Available	

			classification	hazards		

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
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
Petroleum Distillates	Inhalation	peripheral nervous system	May cause damage to organs though prolonged or repeated exposure	similar compoun ds	NOAEL not available	not available
Hexane	Inhalation	peripheral nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.76 mg/l	13 weeks
Hexane	Inhalation	liver	Not classified	Rat	NOAEL Not available	6 months
Hexane	Inhalation	kidney and/or bladder	Not classified	Rat	LOAEL 1.76 mg/l	6 months
Hexane	Inhalation	hematopoietic	Not classified	Mouse	NOAEL 35.2	13 weeks

		system			mg/l	
Hexane	Inhalation	auditory system	Not classified	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	immune system	Not classified	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	eyes	Not classified	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	heart	Not classified	Rat	NOAEL 1.76 mg/l	6 months
Hexane	Inhalation	skin	Not classified	Rat	NOAEL 1.76 mg/l	6 months
Hexane	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.76 mg/l	6 months
Hexane	Ingestion	peripheral nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Ingestion	endocrine system	Not classified	Rat	NOAEL Not available	13 weeks
Hexane	Ingestion	hematopoietic system	Not classified	Rat	NOAEL Not available	13 weeks
Hexane	Ingestion	liver	Not classified	Rat	NOAEL Not available	13 weeks
Hexane	Ingestion	immune system	Not classified	Rat	NOAEL Not available	13 weeks
Hexane	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL Not available	13 weeks
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
Methylcyclopentane	Inhalation	liver	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	heart	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	skin	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	endocrine system	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	immune system	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	muscles	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	nervous system	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	eyes	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	respiratory system	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Inhalation	vascular system	Not classified	Rat	NOAEL 20.2 mg/l	13 weeks
Methylcyclopentane	Ingestion	peripheral nervous system	Not classified	Rat	NOAEL 800 mg/kg/day	8 weeks
Methylcyclopentane	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 500 mg/kg/day	4 weeks
2-Methylpentane	Inhalation	peripheral nervous	Not classified	Rat	NOAEL 5.3	14 weeks

		system			mg/l	
2-Methylpentane	Ingestion	peripheral nervous system	Not classified	Rat	NOAEL Not available	8 weeks
2-Methylpentane	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 2,000 mg/kg/day	28 days
3-Methylpentane	Inhalation	peripheral nervous system	Not classified	Rat	NOAEL 5.3 mg/l	14 weeks
3-Methylpentane	Ingestion	peripheral nervous system	Not classified	Rat	NOAEL Not available	8 weeks
3-Methylpentane	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 2,000 mg/kg/day	28 days
Cyclohexane	Inhalation	liver	Not classified	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Not classified	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Not classified	Rabbit	NOAEL 2.7 mg/l	10 weeks
Cyclohexane	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	Not classified	Rat	NOAEL 8.6 mg/l	30 weeks
Benzene	Inhalation	hematopoietic system	Causes damage to organs through prolonged or repeated exposure	Human and animal	NOAEL Not Available	
Benzene	Inhalation	heart	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	endocrine system	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	liver	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	immune system	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	muscles	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	nervous system	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	eyes	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.96 mg/l	90 days
Benzene	Ingestion	hematopoietic system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 25 mg/kg/day	90 days
Benzene	Ingestion	heart	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Benzene	Ingestion	endocrine system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Benzene	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Benzene	Ingestion	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Benzene	Ingestion	liver	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Benzene	Ingestion	immune system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Benzene	Ingestion	nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Benzene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 600 mg/kg/day	90 days
Benzene	Ingestion	respiratory system	Not classified	Rat	NOAEL 600	90 days

					mg/kg/day	

Aspiration Hazard

Name	Value
Toluene	Aspiration hazard
Petroleum Distillates	Aspiration hazard
Hexane	Aspiration hazard
Heptane	Aspiration hazard
Methylcyclopentane	Aspiration hazard
2-Methylpentane	Aspiration hazard
3-Methylpentane	Aspiration hazard
Cyclohexane	Aspiration hazard
Benzene	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)

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
Aspiration Hazard
Reproductive toxicity
Serious eye damage or eye irritation
Skin Corrosion or Irritation
Specific target organ toxicity (single or repeated exposure)

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
Toluene	108-88-3	Trade Secret 45 - 70
Cyclohexane	110-82-7	< 4.5
Hexane	110-54-3	Trade Secret 10 - 30

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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