Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

SECTION 1: Identification

1.1. Product identifier
3M Diesel Fuel Tank Additive

Product Identification Numbers
XS-0020-0466-0

1.2. Recommended use and restrictions on use

Recommended use
Automotive, Tank Additive

1.3. Supplier's details
ADDRESS: 3M Malaysia Sdn. Bhd., Level 8, Block F, Oasis Square, No.2, Jalan PJU 1A/7A, Ara Damansara 47301 Petaling, Jaya, Selangor
Telephone: 03-7884 2888
E Mail: 3mmyehsr@mmm.com
Website: www.3M.com.my

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Flammable Liquid: Category 3.
Skin Corrosion/Irritation: Category 2.
Carcinogenicity: Category 2.
Specific Target Organ Toxicity (single exposure): Category 2.
Specific Target Organ Toxicity (repeated exposure): Category 2.
Aspiration Hazard: Category 1.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
Signal word
Danger

Symbols
Flame |Exclamation mark |Health Hazard |Environment |

Pictograms

Hazard Statements:

H226	Flammable liquid and vapor.
H315	Causes skin irritation.
H351	Suspected of causing cancer.
H304	May be fatal if swallowed and enters airways.
H371	May cause damage to organs: blood or blood-forming organs.
H373	May cause damage to organs through prolonged or repeated exposure: blood or blood-forming organs | respiratory system.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements
General:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

Prevention:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P273	Avoid release to the environment.
P281	Use personal protective equipment as required.

Response:

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P331	Do NOT induce vomiting.
P332 + P313	If skin irritation occurs: Get medical advice.
P370 + P378	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

P405	Store locked up.

Disposal:

P501	Dispose of contents and container in accordance with applicable local, regional, national, and international regulations.

2.3. Other hazards
May cause drowsiness or dizziness.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	50 - 60
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	15 - 30
NAPHTHALENE	91-20-3	1 - 5
1,2,4-TRIMETHYLBENZENE	95-63-6	1 - 5
2-ETHYLHEXANOL	104-76-7	1 - 5

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:
If exposed, flush eyes with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms develop, 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. See Section 11 for additional details. 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
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 that is resistant to polar solvents. 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
Keep out of reach of children. 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
2-ETHYLHEXANOL	104-76-7	ACGIH	TWA:5 ppm	A3: Confirmed animal carcin.
NAPHTHALENE	91-20-3	ACGIH	TWA:10 ppm	A3: Confirmed animal carcin.,Danger of cutaneous absorption
NAPHTHALENE	91-20-3	Malaysia OELs	TWA(8 hours):52 mg/m3(10 ppm)	
1,2,4-TRIMETHYLBENZENE	95-63-6	ACGIH	TWA:10 ppm	A4: Not class. as human carcin

ACGIH : American Conference of Governmental Industrial Hygienists
CMRG : Chemical Manufacturer's Recommended Guidelines
Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection
None required.

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.

For prolonged or repeated contact, gloves made from the following material(s) are recommended (breakthrough times are >4 hours): Butyl Rubber, Neoprene, Nitrile Rubber

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 and particulates
Half facepiece or full facepiece supplied-air respirator

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 Brown

Odor	Petroleum
Odor threshold	*No Data Available*
pH	*No Data Available*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	175 ºC [*Details:*tested]
Flash Point	>=40 ºC [*Test Method:*Closed Cup]
Evaporation rate	*No Data Available*
Flammability	Flammable Liquid: Category 3.
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	*No Data Available*
Relative Vapor Density	*No Data Available*
Density	0.8361 g/ml
Relative Density	0.8361 [*Ref Std:*WATER=1]
Water solubility	*No Data Available*
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	1 - 4 mm2/sec
Volatile Organic Compounds	*No Data Available*
Percent volatile	*No Data Available*
VOC Less H2O & Exempt Solvents	*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
Heat
Sparks and/or flames

10.5. Incompatible materials
Combustibles
Reducing agents
Strong oxidizing agents
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:
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:
May be harmful in contact with skin.
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

Eye Contact:
Contact with the eyes during product use is not expected to result in significant irritation.

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.

Blood Effects: Signs/symptoms may include generalized weakness and fatigue, skin pallor, changes in blood clotting time, internal bleeding, and/or hemoglobinemia.

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

Blood Effects: Signs/symptoms may include generalized weakness and fatigue, skin pallor, changes in blood clotting time, internal bleeding, and/or hemoglobinemia.

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

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 >2,000 - =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
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation-Vapor		LC50 estimated to be 20 - 50 mg/l
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Dermal	Rabbit	LD50 > 3,000 mg/kg
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Ingestion	Rat	LD50 > 5,000 mg/kg
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Dermal	Rabbit	LD50 > 2,000 mg/kg
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	Rat	LD50 > 5,000 mg/kg
2-ETHYLHEXANOL	Dermal	Rabbit	LD50 > 2,000 mg/kg
2-ETHYLHEXANOL	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.8 mg/l
2-ETHYLHEXANOL	Ingestion	Rat	LD50 estimated to be 2,000 - 5,000 mg/kg
NAPHTHALENE	Dermal	Human	LD50 estimated to be 2,000 - 5,000 mg/kg
NAPHTHALENE	Inhalation-Vapor	Human	LC50 estimated to be 20 - 50 mg/l
NAPHTHALENE	Ingestion	Human	LD50 estimated to be 300 - 2,000 mg/kg
1,2,4-TRIMETHYLBENZENE	Dermal	Rabbit	LD50 > 3,160 mg/kg
1,2,4-TRIMETHYLBENZENE	Inhalation-Vapor (4 hours)	Rat	LC50 18 mg/l
1,2,4-TRIMETHYLBENZENE	Ingestion	Rat	LD50 3,400 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Rabbit	Irritant
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Irritant
2-ETHYLHEXANOL	Rabbit	Irritant
1,2,4-TRIMETHYLBENZENE	Rabbit	Irritant
NAPHTHALENE	Rabbit	Minimal irritation

Serious Eye Damage/Irritation

Name	Species	Value
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Rabbit	No significant irritation
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Rabbit	Mild irritant
2-ETHYLHEXANOL	Rabbit	Severe irritant
1,2,4-TRIMETHYLBENZENE	Rabbit	Mild irritant
NAPHTHALENE	Rabbit	No significant irritation

Sensitization:

Skin Sensitization

Name	Species	Value
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Guinea pig	Not classified

HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Guinea pig	Not classified
2-ETHYLHEXANOL	Human	Not classified
1,2,4-TRIMETHYLBENZENE	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
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	In vivo	Not mutagenic
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	In Vitro	Some positive data exist, but the data are not sufficient for classification
2-ETHYLHEXANOL	In Vitro	Not mutagenic
2-ETHYLHEXANOL	In vivo	Not mutagenic
1,2,4-TRIMETHYLBENZENE	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	Human and animal	Some positive data exist, but the data are not sufficient for classification
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
2-ETHYLHEXANOL	Ingestion	Multiple animal species	Not carcinogenic
NAPHTHALENE	Inhalation	Multiple animal species	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	Not classified for development	Rat	NOAEL 2.4 mg/l	during organogenesis
2-ETHYLHEXANOL	Inhalation	Not classified for development	Rat	NOAEL 0.85 mg/l	during gestation
2-ETHYLHEXANOL	Ingestion	Not classified for male reproduction	Rat	NOAEL 500 mg/kg/day	13 weeks
2-ETHYLHEXANOL	Dermal	Not classified for development	Rat	NOAEL 2,500 mg/kg/day	during organogenesis
2-ETHYLHEXANOL	Ingestion	Not classified for development	Rat	NOAEL 130 mg/kg/day	during organogenesis
1,2,4-TRIMETHYLBENZENE	Inhalation	Not classified for female reproduction	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	Not classified for male reproduction	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	Not classified for development	Rat	NOAEL 1.5 mg/l	during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration

NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	nervous system	Not classified	Dog	NOAEL 6.5 mg/l	4 hours
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Professional judgement	NOAEL Not available	
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
2-ETHYLHEXANOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	
2-ETHYLHEXANOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
2-ETHYLHEXANOL	Ingestion	central nervous system depression	May cause drowsiness or dizziness		NOAEL Not available	
1,2,4-TRIMETHYLBENZENE	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
1,2,4-TRIMETHYLBENZENE	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
1,2,4-TRIMETHYLBENZENE	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
NAPHTHALENE	Ingestion	blood	Causes damage to organs	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
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	nervous system	Not classified	Rat	LOAEL 4.6 mg/l	6 months
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	kidney and/or bladder	Not classified	Rat	LOAEL 1.9 mg/l	13 weeks
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	respiratory system	Not classified	Multiple animal species	NOAEL 0.6 mg/l	90 days
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	bone, teeth, nails, and/or hair	Not classified	Rat	NOAEL 5.6 mg/l	12 weeks
NAPHTHA	Inhalation	blood	Not classified	Rat	NOAEL 5.6	12 weeks

(PETROLEUM), HYDRODESULFURIZED HEAVY					mg/l	
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	liver	Not classified	Rat	NOAEL 5.6 mg/l	12 weeks
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	muscles	Not classified	Rat	NOAEL 5.6 mg/l	12 weeks
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Inhalation	heart	Not classified	Multiple animal species	NOAEL 1.3 mg/l	90 days
2-ETHYLHEXANOL	Dermal	hematopoietic system	Not classified	Rat	NOAEL 830 mg/kg/day	11 days
2-ETHYLHEXANOL	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 0.64 mg/l	90 days
2-ETHYLHEXANOL	Ingestion	liver	Not classified	Rat	NOAEL 650 mg/kg/day	13 weeks
2-ETHYLHEXANOL	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 130 mg/kg/day	13 weeks
2-ETHYLHEXANOL	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 1,245 mg/kg/day	11 days
2-ETHYLHEXANOL	Ingestion	immune system	Not classified	Rat	NOAEL 1,245 mg/kg/day	11 days
2-ETHYLHEXANOL	Ingestion	central nervous system	Not classified	Rat	NOAEL 500 mg/kg/day	13 weeks
1,2,4-TRIMETHYLBENZENE	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 0.5 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.1 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
1,2,4-TRIMETHYLBENZENE	Inhalation	liver	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	heart	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Inhalation	immune system	Not classified	Rat	NOAEL 1.2 mg/l	3 months
1,2,4-TRIMETHYLBENZENE	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 600 mg/kg/day	14 days
1,2,4-TRIMETHYLBENZENE	Ingestion	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
1,2,4-TRIMETHYLBENZENE	Ingestion	immune system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
1,2,4-TRIMETHYLBENZENE	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
NAPHTHALENE	Dermal	blood	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
NAPHTHALENE	Dermal	eyes	Not classified	Human	NOAEL Not available	occupational exposure
NAPHTHALENE	Inhalation	respiratory system	Causes damage to organs through	Rat	LOAEL 0.01	13 weeks

			prolonged or repeated exposure		mg/l	
NAPHTHALENE	Inhalation	blood	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
NAPHTHALENE	Inhalation	eyes	Not classified	Human	NOAEL Not available	occupational exposure
NAPHTHALENE	Ingestion	blood	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
NAPHTHALENE	Ingestion	eyes	May cause damage to organs though prolonged or repeated exposure	Rabbit	LOAEL 500 mg/kg/day	15 days

Aspiration Hazard

Name	Value
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	Aspiration hazard
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	Aspiration hazard
1,2,4-TRIMETHYLBENZENE	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

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labeling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 2: Toxic to aquatic life.

Chronic aquatic hazard:
GHS Chronic 2: Toxic to aquatic life with long lasting effects

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	Fathead Minnow	Analogous Compound	96 hours	LL50	8.2 mg/l
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	Green algae	Analogous Compound	72 hours	EL50	3.1 mg/l
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	Water flea	Analogous Compound	48 hours	EL50	4.5 mg/l
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	Green algae	Analogous Compound	72 hours	NOEL	0.5 mg/l
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	Water flea	Analogous Compound	21 days	NOEL	2.6 mg/l
HEAVY AROMATIC SOLVENT	64742-94-5	Green algae	Experimental	72 hours	EL50	11 mg/l

NAPHTHA (PETROLEUM)						
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	Rainbow Trout	Experimental	96 hours	LL50	2 mg/l
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	Water flea	Experimental	48 hours	EL50	3 mg/l
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	Green algae	Experimental	72 hours	NOEL	2.5 mg/l
1,2,4-TRIMETHYLBENZENE	95-63-6	Fathead Minnow	Experimental	96 hours	LC50	7.72 mg/l
1,2,4-TRIMETHYLBENZENE	95-63-6	Mysid Shrimp	Experimental	96 hours	LC50	2 mg/l
1,2,4-TRIMETHYLBENZENE	95-63-6	Water flea	Experimental	48 hours	LC50	3.6 mg/l
1,2,4-TRIMETHYLBENZENE	95-63-6	Water flea	Analogous Compound	21 days	NOEC	0.4 mg/l
2-ETHYLHEXANOL	104-76-7	Brine shrimp	Experimental	24 hours	LC50	19 mg/l
2-ETHYLHEXANOL	104-76-7	Golden Orfe	Experimental	96 hours	LC50	17.1 mg/l
2-ETHYLHEXANOL	104-76-7	Green algae	Experimental	72 hours	ErC50	21 mg/l
2-ETHYLHEXANOL	104-76-7	Water flea	Experimental	21 days	NOEC	1.06 mg/l
2-ETHYLHEXANOL	104-76-7	Water flea	Experimental	48 hours	EC50	39 mg/l
2-ETHYLHEXANOL	104-76-7	Green algae	Experimental	72 hours	ErC10	7.41 mg/l
2-ETHYLHEXANOL	104-76-7	Zebra Fish	Experimental	35 days	NOEC	0.193 mg/l
2-ETHYLHEXANOL	104-76-7	Ciliated protozoa	Experimental	48 hours	IC50	106 mg/l
NAPHTHALENE	91-20-3	Diatom	Experimental	72 hours	EbC50	0.4 mg/l
NAPHTHALENE	91-20-3	Invertebrate	Experimental	96 hours	LC50	2.35 mg/l
NAPHTHALENE	91-20-3	Rainbow Trout	Experimental	96 hours	LC50	0.11 mg/l
NAPHTHALENE	91-20-3	Water flea	Experimental	48 hours	EC50	1.6 mg/l
NAPHTHALENE	91-20-3	Coho salmon	Experimental	40 days	NOEC	0.37 mg/l
NAPHTHALENE	91-20-3	Duckweed	Experimental	8 days	NOEC	16 mg/l
NAPHTHALENE	91-20-3	Invertebrate	Experimental	21 days	NOEC	0.5 mg/l
NAPHTHALENE	91-20-3	Pink Salmon	Experimental	40 days	NOEC	0.12 mg/l
NAPHTHALENE	91-20-3	Bacteria	Experimental	24 hours	IC50	29 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	Estimated Photolysis		Photolytic half-life (in air)	13 days (t 1/2)	
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	Data not availbl-insufficient	N/A	N/A	N/A	N/A
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	Estimated Biodegradation	28 days	Biological Oxygen Demand	58 %BOD/ThOD	OECD 301F - Manometric Respiro
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	Estimated Photolysis		Photolytic half-life (in air)	<2.06 days (t 1/2)	
1,2,4-TRIMETHYLBENZENE	95-63-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	>60 %BOD/ThOD	OECD 301F - Manometric Respiro
1,2,4-TRIMETHYLBENZENE	95-63-6	Experimental Photolysis		Photolytic half-life (in air)	11.8 hours (t 1/2)	
2-ETHYLHEXANOL	104-76-7	Experimental Biodegradation	14 days	Biological Oxygen Demand	89.5 %BOD/ThOD	OECD 301C - MITI (I)
2-ETHYLHEXANOL	104-76-7	Experimental Aquatic Inherent Biodegrad.	7 days	Dissolv. Organic Carbon Deplet	97 %removal of DOC	OECD 302B Zahn-Wellens/EVPA
2-ETHYLHEXANOL	104-76-7	Experimental Photolysis		Photolytic half-life (in air)	2.4 days (t 1/2)	
NAPHTHALENE	91-20-3	Experimental Biodegradation	14 days	Carbon dioxide evolution	>99 %CO2 evolution/THCO2 evolution	
NAPHTHALENE	91-20-3	Experimental Biodegradation	28 days	Biological Oxygen Demand	>74 %BOD/ThOD	OECD 301C - MITI (I)
NAPHTHALENE	91-20-3	Experimental Aquatic Inherent Biodegrad.	28 days	Biological Oxygen Demand	2 %BOD/ThOD	similar to OECD 302C
NAPHTHALENE	91-20-3	Experimental Photolysis		Photolytic half-life (in air)	1.2 days (t 1/2)	
NAPHTHALENE	91-20-3	Experimental Soil Metabolism Aerobic	10 days	Percent degraded	90 %degraded	

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1	Experimental Bioconcentration		Bioaccumulation Factor	>1000	
HEAVY AROMATIC SOLVENT NAPHTHA (PETROLEUM)	64742-94-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.4	
1,2,4-TRIMETHYLBENZENE	95-63-6	Experimental BCF - Fish	56 days	Bioaccumulation Factor	≤275	OECD305-Bioconcentration

1,2,4-TRIMETHYLBENZENE	95-63-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	3.63	
2-ETHYLHEXANOL	104-76-7	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.9	OECD 117 log Kow HPLC method
NAPHTHALENE	91-20-3	Experimental BCF - Fish	56 days	Bioaccumulation Factor	≤168	OECD305-Bioconcentration
NAPHTHALENE	91-20-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	3.7	OECD 117 log Kow HPLC method

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available

SECTION 13: Disposal considerations

13.1. Disposal methods

According to the Environmental Quality (Scheduled Wastes) Regulations 2005, scheduled waste has to be sent to a prescribed premise for recycling, treatment or disposal. Please approach Kualiti Alam for proper schedule waste classification and disposal.

SECTION 14: Transport Information

Marine Transport (IMDG)

UN Number:UN1268
Proper Shipping Name:PETROLEUM DISTILLATES, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:3
Subsidiary Risk: None assigned.
Packing Group:III
Limited Quantity: Yes
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number:UN1268
Proper Shipping Name:PETROLEUM DISTILLATES, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:3
Subsidiary Risk: None assigned.
Packing Group:III
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying

with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. 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.

SECTION 16: Other information

DISCLAIMER: The information in this Safety Data Sheet (SDS) is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this SDS or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own evaluation to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into Malaysia, you are responsible for all applicable regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration/notification.

3M Malaysia SDSs are available at www.3M.com.my