



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

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SECTION 1: Identification

1.1. Product identifier

3M™ Citrus Base Industrial Cleaner for Metal Equipment (Aerosol)

1.2. Recommended use and restrictions on use

Recommended use

aerosol cleaner, Industrial use.

1.3. Supplier's details

Address: 3M Technologies (S) Pte Ltd, 10 Ang Mo Kio Street 65, Singapore 569059
Telephone: +65 6450 8888
Website: www.3m.com.sg

1.4. Emergency telephone number

+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Flammable Aerosol: Category 1.

Specific Target Organ Toxicity (single exposure): Category 1.

Acute Aquatic Toxicity: Category 1.

Chronic Aquatic Toxicity: Category 2.

2.2. Label elements

SIGNAL WORD

DANGER!

Symbols

Flame | Health Hazard | Environment |

Pictograms



HAZARD STATEMENTS

H222	Extremely flammable aerosol.
H229	Pressurized container: may burst if heated.
H370	Causes damage to organs: cardiovascular system
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.

Response:

P308 + P311	IF exposed or concerned: Call a POISON CENTER or doctor/physician.
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Storage:

P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.
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Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.
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2.3. Other hazards

Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
D-limonene	5989-27-5	70 - 80
Propane	74-98-6	10 - 20
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	9005-65-6	7 - 13

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Remove person to fresh air. Get medical attention.

Skin contact

Wash with soap and water. 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

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

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

Target organ effects. See Section 11 for additional details.

4.3. Indication of any immediate medical attention and special treatment required

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

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

Aldehydes.

Hydrocarbons.

Carbon monoxide.

Carbon dioxide.

Ketones.

Condition

During combustion.

During combustion.

During combustion.

During combustion.

During combustion.

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

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. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Close cylinder. Cover spill area with a fire-extinguishing foam. 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 authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapours/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 contact with oxidising agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Store away from heat. Store away from acids. Store away from oxidising 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	CAS Nbr	Agency	Limit type	Additional comments
D-limonene	5989-27-5	AIHA	TWA:165.5 mg/m3(30 ppm)	
Propane	74-98-6	ACGIH	Limit value not established:	asphyxiant

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order

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/vapours/spray. If ventilation is not adequate, use respiratory protection 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:

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.

Gloves made from the following material(s) are recommended: Nitrile rubber.

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 vapours 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	Gas. Aerosol
Specific Physical Form:	Aerosol
Color	Light Yellow
Odor	Sweet Odor
Odour threshold	<i>No data available.</i>
pH	<i>Not applicable.</i>
Melting point/Freezing point	<i>No data available.</i>
Boiling point/Initial boiling point/Boiling range	<i>Not applicable.</i>
Flash point	-45.6 °C
Evaporation rate	<i>Not applicable.</i>
Flammability (solid, gas)	Flammable Aerosol: Category 1.
Flammable Limits(LEL)	<i>No data available.</i>
Flammable Limits(UEL)	<i>No data available.</i>
Vapour pressure	3,733 Pa [@ 20 °C] [Details:Composite Vapour Pressure (Calculated)]
Vapor Density and/or Relative Vapor Density	<i>Not applicable.</i>
Density	0.784 g/ml
Relative density	0.784 [Ref Std:WATER=1]
Water solubility	Slight (less than 10%)
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Autoignition temperature	<i>No data available.</i>
Decomposition temperature	<i>Not applicable.</i>
Viscosity/Kinematic Viscosity	<i>Not applicable.</i>
Volatile organic compounds (VOC)	95.7 % [Test Method:calculated per CARB title 2]
Volatile organic compounds (VOC)	751 g/l [Test Method:calculated SCAQMD rule 443.1] [Details:Material VOC]
Percent volatile	<i>No data available.</i>
VOC less H ₂ O & exempt solvents	<i>No data available.</i>
Molecular weight	<i>No data available.</i>
Solids content	2 - 7 %

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 polymerisation will not occur.

10.4 Conditions to avoid

Heat.

10.5 Incompatible materials

Strong oxidising 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 labelling, 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. May cause additional health effects (see below).

Skin contact

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

Eye contact

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

Ingestion

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

Additional Health Effects:**Single exposure may cause target organ effects:**

Single exposure, above recommended guidelines, may cause: Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

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 >20 - =50 mg/l
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
D-limonene	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
D-limonene	Dermal	Rabbit	LD50 > 5,000 mg/kg
D-limonene	Ingestion	Rat	LD50 4,400 mg/kg

3M™ Citrus Base Industrial Cleaner for Metal Equipment (Aerosol)

Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Dermal	Not available	LD50 > 5,000 mg/kg
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.1 mg/l
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Ingestion	Rat	LD50 20,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
D-limonene	Rabbit	Irritant
Propane	Rabbit	Minimal irritation
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
D-limonene	Rabbit	Mild irritant
Propane	Rabbit	Mild irritant
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Rabbit	No significant irritation

Sensitization:**Skin Sensitisation**

Name	Species	Value
Overall product	Guinea pig	Not classified
D-limonene	Mouse	Sensitising
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Guinea pig	Not classified

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
D-limonene	In Vitro	Not mutagenic
D-limonene	In vivo	Not mutagenic
Propane	In Vitro	Not mutagenic
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
D-limonene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Ingestion	Rat	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
D-limonene	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	premating & during

3M™ Citrus Base Industrial Cleaner for Metal Equipment (Aerosol)

					gestation
D-limonene	Ingestion	Not classified for development	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Ingestion	Not classified for female reproduction	Rat	NOAEL 6,666 mg/kg/day	3 generation
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Ingestion	Not classified for male reproduction	Rat	NOAEL 6,666 mg/kg/day	3 generation
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Ingestion	Not classified for development	Rat	NOAEL 5,000 mg/kg/day	during organogenesis

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
D-limonene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
D-limonene	Ingestion	nervous system	Not classified		NOAEL Not available	
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
D-limonene	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 75 mg/kg/day	103 weeks
D-limonene	Ingestion	liver	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
D-limonene	Ingestion	heart endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system muscles nervous system respiratory system	Not classified	Rat	NOAEL 600 mg/kg/day	103 weeks
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	Ingestion	heart endocrine system gastrointestinal tract bone, teeth, nails, and/or hair hematopoietic system liver immune system nervous system kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 4,132 mg/kg/day	90 days

Aspiration Hazard

Name	Value
D-limonene	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 labelling, 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 1: Very 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 Nbr	Organism	Type	Exposure	Test endpoint	Test result
D-limonene	5989-27-5	Fathead minnow	Experimental	96 hours	LC50	0.702 mg/l
D-limonene	5989-27-5	Green algae	Experimental	72 hours	ErC50	0.32 mg/l
D-limonene	5989-27-5	Water flea	Experimental	48 hours	EC50	0.307 mg/l
D-limonene	5989-27-5	Fathead minnow	Experimental	8 days	EC10	0.32 mg/l
D-limonene	5989-27-5	Green algae	Experimental	72 hours	ErC10	0.174 mg/l
D-limonene	5989-27-5	Water flea	Experimental	21 days	NOEC	0.153 mg/l
Propane	74-98-6	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	9005-65-6	Green algae	Analogous Compound	72 hours	EL50	58.84 mg/l
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	9005-65-6	Zebra Fish	Analogous Compound	96 hours	LL50	>100 mg/l
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	9005-65-6	Green algae	Analogous Compound	72 hours	EL10	19.05 mg/l
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	9005-65-6	Water flea	Analogous Compound	21 days	NOEL	10 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
D-limonene	5989-27-5	Experimental Biodegradation	14 days	BOD	98 %BOD/ThOD	OECD 301C - MITI test (I)
D-limonene	5989-27-5	Experimental Biodegradation	14 days	Dissolv. Organic Carbon Deplet	>93.8 %removal of DOC	OECD 303A - Simulated Aerobic
Propane	74-98-6	Experimental Photolysis		Photolytic half-life (in air)	27.5 days (t 1/2)	
Non-ionic surfactant mix -	9005-65-6	Experimental Biodegradation	28 days	CO2 evolution	61 %CO2 evolution/THCO2	ISO 14593 Inorg C Headspace

3M™ Citrus Base Industrial Cleaner for Metal Equipment (Aerosol)

N.J.T.S. Reg No 800927-500P					evolution	
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12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
D-limonene	5989-27-5	Modeled Bioconcentration		Bioaccumulation factor	2100	Catalogic™
D-limonene	5989-27-5	Experimental Bioconcentration		Log Kow	4.57	
Propane	74-98-6	Experimental Bioconcentration		Log Kow	2.36	
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	9005-65-6	Modeled Bioconcentration		Bioaccumulation factor	5	Catalogic™
Non-ionic surfactant mix - N.J.T.S. Reg No 800927-500P	9005-65-6	Modeled Bioconcentration		Log Kow	5.61	Episuite™

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**

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

Incinerate in a permitted waste incineration facility. Facility must be capable of handling aerosol cans. 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.

SECTION 14: Transport Information**International Regulations**

UN No.: UN1950

UN Proper shipping name: AEROSOLS

Transportation Class (IMO): 2.1-2.1 Flammable gases

Transportation Class (IATA): 2.1-2.1 Flammable gases

Other Dangerous Goods Descriptions (IMO): None assigned

Other Dangerous Goods Descriptions (IATA): None assigned

Packing Group: None assigned

Marine pollutant: None assigned

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 new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. 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.

This product may contain component(s) that are regulated by the following:

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.

Fire Safety (Petroleum and Flammable Materials) Regulations: This product is subject to the requirements in the Regulations

SECTION 16: Other information

DISCLAIMER: The information on this Safety Data Sheet 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 Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

3M Singapore SDSs are available at www.3m.com.sg