



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the GHS guidelines & India Hazardous substances (Classification, Labeling & Packaging) Draft Rules 2011.

SECTION 1: Identification

1.1. Product identifier

3M™ Avagard™ Handrub

Product Identification Numbers

IA-4201-0019-9 IA-4201-0024-9 IA-4201-0043-9 IA-4201-0045-4

1.2. Recommended use and restrictions on use

Recommended use

Disinfectant, General Purpose Hand Sanitizer

1.3. Supplier's details

Address: 3M India Limited, plot-48-51, Electronic city, Hosur road, Bangalore-560100
Telephone: 080-45543000, contact Product EHS team
E Mail: productehs.in@mmm.com
Website: <http://solutions.3mindia.co.in>

1.4. Emergency telephone number

080-45543000 (Contact hours: 8:00 AM to 5:00 PM)

SECTION 2: Hazard identification

Under MSIHC Rules, information is noted below on flammability, acute toxicity and explosivity relevant to this product. In line with international standards, information on other hazard classes and associated precautionary statements relevant to this product are included as well.

2.1. Classification of the substance or mixture

Flammable Liquid: Category 1.
Acute Toxicity (oral): Category 5.
Serious Eye Damage/Irritation: Category 2A
Specific Target Organ Toxicity (single exposure): Category 3.

2.2. Label elements

Signal Word

DANGER!

Symbols

Flame | Exclamation mark |

Pictograms



HAZARD STATEMENTS:

H224	Extremely flammable liquid and vapour.
H303	May be harmful if swallowed.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

PRECAUTIONARY STATEMENTS

Prevention:

P210A	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370 + P378G	In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

2.3. Other hazards

Repeated exposure may cause skin dryness or cracking.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	CAS Nbr	% by Wt
2-Propanol	67-63-0	30 - 60
1-Propanol	71-23-8	10 - 30
Water	7732-18-5	10 - 30

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

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

Skin contact

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

Eye contact

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

If swallowed

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

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

See Section 11.1 Information on toxicological effects

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

Carbon monoxide.
Carbon dioxide.

Condition

During combustion.
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. 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

Contain spill. 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. 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing 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 release to the environment. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Wear low static or properly grounded shoes. 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 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
2-Propanol	67-63-0	ACGIH	TWA:200 ppm;STEL:400 ppm	A4: Not class. as human carcin
1-Propanol	71-23-8	ACGIH	TWA:100 ppm	A4: Not class. as human carcin

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CELL: 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. Use explosion-proof ventilation equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

None required.

Skin/hand protection

PPE No chemical protective gloves are required.

Respiratory protection

None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Liquid.
Color	Light Pink
Odor	Characteristic Odour
Odour threshold	<i>Not applicable.</i>
pH	4.5 - 7.5 [Details:at 25 °C]
Melting point/Freezing point: NA	<i>Not applicable.</i>
Boiling point/Initial boiling point/Boiling range	26 °C
Flash point	21 °C
Evaporation rate	<i>No data available.</i>
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	<i>No data available.</i>
Flammable Limits(UEL)	<i>No data available.</i>
Vapour pressure	<i>No data available.</i>
Vapour density	<i>No data available.</i>
Density	0.83 g/ml
Relative density	0.83
Water solubility	<i>No data available.</i>
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	5 mPa-s [Details:at 25 Degrees C]

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.

Sparks and/or flames.

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products

Substance

None known.

Condition

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

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

Dermal Defatting: Signs/symptoms may include localised redness, itching, drying and cracking of skin.

Eye contact

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

Ingestion

May be harmful if swallowed.

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

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 >50 mg/l
Overall product	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
2-Propanol	Dermal	Rabbit	LD50 12,870 mg/kg
2-Propanol	Inhalation-Vapor (4 hours)	Rat	LC50 72.6 mg/l
2-Propanol	Ingestion	Rat	LD50 4,710 mg/kg
1-Propanol	Dermal	Rabbit	LD50 4,000 mg/kg
1-Propanol	Inhalation-Vapor (4 hours)	Rat	LC50 > 34 mg/l
1-Propanol	Ingestion	Rat	LD50 estimated to be 2,000 - 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
2-Propanol	Multiple animal species	No significant irritation

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1-Propanol	Rabbit	Minimal irritation
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Serious Eye Damage/Irritation

Name	Species	Value
2-Propanol	Rabbit	Severe irritant
1-Propanol	Rabbit	Severe irritant

Sensitization:**Skin Sensitisation**

Name	Species	Value
2-Propanol	Guinea pig	Not classified
1-Propanol	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
2-Propanol	In Vitro	Not mutagenic
2-Propanol	In vivo	Not mutagenic
1-Propanol	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
2-Propanol	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
1-Propanol	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
2-Propanol	Ingestion	Not classified for development	Rat	NOAEL 400 mg/kg/day	during organogenesis
2-Propanol	Inhalation	Not classified for development	Rat	LOAEL 9 mg/l	during gestation
1-Propanol	Inhalation	Not classified for male reproduction	Rat	NOAEL 8.6 mg/l	6 weeks
1-Propanol	Inhalation	Not classified for development	Rat	NOAEL 8.6 mg/l	during gestation

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

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2-Propanol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
2-Propanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
2-Propanol	Inhalation	auditory system	Not classified	Guinea	NOAEL 13.4	24 hours

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				pig	mg/l	
2-Propanol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
1-Propanol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Mouse	NOAEL 5 mg/l	4 hours
1-Propanol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL Not available	
1-Propanol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
2-Propanol	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 12.3 mg/l	24 months
2-Propanol	Inhalation	nervous system	Not classified	Rat	NOAEL 12 mg/l	13 weeks
2-Propanol	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 400 mg/kg/day	12 weeks
1-Propanol	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 70 mg/kg/day	83 weeks
1-Propanol	Ingestion	liver	Not classified	Rat	LOAEL 70 mg/kg/day	83 weeks

Aspiration Hazard

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

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:**

Not acutely toxic to aquatic life by GHS criteria.

Chronic aquatic hazard:

Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
2-Propanol	67-63-0	Crustacea	Experimental	24 hours	LC50	>10,000 mg/l
2-Propanol	67-63-0	Green Algae	Experimental	72 hours	EC50	>1,000 mg/l
2-Propanol	67-63-0	Ricefish	Experimental	96 hours	LC50	>100 mg/l
2-Propanol	67-63-0	Water flea	Experimental	48 hours	EC50	>1,000 mg/l
2-Propanol	67-63-0	Green algae	Experimental	72 hours	NOEC	1,000 mg/l
2-Propanol	67-63-0	Water flea	Experimental	21 days	NOEC	100 mg/l
1-Propanol	71-23-8	Algae other	Experimental	96 hours	EC50	4,480 mg/l

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1-Propanol	71-23-8	Fathead minnow	Experimental	96 hours	LC50	4,555 mg/l
1-Propanol	71-23-8	Fish	Experimental	96 hours	LC50	3,000 mg/l
1-Propanol	71-23-8	Water flea	Experimental	48 hours	EC50	3,642 mg/l
1-Propanol	71-23-8	Water flea	Experimental	21 days	NOEC	>100 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
2-Propanol	67-63-0	Experimental Biodegradation	14 days	BOD	86 % BOD/ThBOD	OECD 301C - MITI test (I)
1-Propanol	71-23-8	Experimental Biodegradation	20 days	BOD	73 % BOD/ThBOD	OECD 301D - Closed bottle test

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
2-Propanol	67-63-0	Experimental Bioconcentration		Log Kow	0.05	Other methods
1-Propanol	71-23-8	Experimental Bioconcentration		Log Kow	0.2	Other methods

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. 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**Air Transport (IATA) Regulations**

UN No UN1993

Proper Shipping Name FLAMMABLE LIQUID, N.O.S. (Contains Isopropyl alcohol)

Hazard Class/Division 3

Subsidiary Risk Not applicable

Packing Group: I

Marine Transport (IMDG)

UN No UN1993

Proper Shipping Name FLAMMABLE LIQUID, N.O.S. (Contains Isopropyl alcohol)

Hazard Class/Division 3

Subsidiary Risk Not applicable

Packing Group: I

Environmental Hazards: Not applicable

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.

Applicable Environmental, Health and Safety Regulations

The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989

The Bio Medical Waste (Management & Handling) Rules, 1998

Hazardous Chemicals (Classification, Packaging and Labelling Draft Rules), 2011

The following ingredients are listed as hazardous on Part II of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules

2-Propanol

The following ingredients are classified as hazardous based on the criteria listed under Part I of Schedule I of the India Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) rules:

Product is classified as Extremely Flammable Liquid as per MSIHC Rules, 1989.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 **Flammability:** 4 **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.

Revision information:

Section 14: Packing group (IMO) information was modified.

Company Telephone information was modified.

Section 1: Emergency telephone information was modified.

Section 2: Hazard - Other information was modified.

Label: GHS Classification information was modified.

Section 6: Accidental release clean-up information information was modified.

Section 6: Accidental release personal information information was modified.

OEL Reg Agency Desc information was modified.

Section 09: Color information was added.

Section 09: Odor information was added.

Sections 3 and 9: Odour, colour, grade information information was deleted.

Section 10: Conditions to avoid physical property information was modified.

Section 10: Materials to avoid physical property information was modified.

Section 11: Health Effects - Ingestion information information was modified.

Section 14: Packing group (IATA) information was modified.

Section 15: Applicable Environmental, Health and Safety Regulations information was modified.

Section 15: MSIHC Ingredients information was modified.

Section 15: MSIHC Part I of Schedule I ingredients information was modified.

Section 16: NFPA explanation information was modified.

Section 16: NFPA hazard classification for special hazards information was modified.

Section 16: UK disclaimer information was deleted.

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3M India SDSs are available at <http://solutions.3mindia.co.in>