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(TM) Hot Melt Adhesive 3731-B, 3731-PG, 3731-Q

Product Identification Numbers
62-3731-7230-3 62-3731-7234-5 62-3731-9132-9 62-3731-9330-9 62-3731-9335-8
H0-0020-2399-4

1.2. Recommended use and restrictions on use

Recommended use
Adhesive, Hot Melt Adhesive.

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
Not classified as hazardous according to Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

2.2. Label elements
Signal word
Not applicable.

Symbols
Not applicable.

Pictograms

Not applicable.

2.3. Other hazards
May cause thermal burns.

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Paraffin Wax	8002-74-2	1 - 10
Hydrocarbon Resin	68132-00-3	10 - 20
Propylene Copolymers (NJTS Reg. No. 04499600-7066)	Trade Secret	35 - 65
Stabilized Rosin Ester (NJTS Reg. No. 04499600-7067)	Trade Secret	5 - 10
Styrene-Butadiene Polymer	66070-58-4	5 - 10
Non-Hazardous Resins and Additives	Mixture	10 - 30
MALEIC ANHYDRIDE	108-31-6	0 0.01

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
No need for first aid is anticipated.

Skin Contact:
Immediately flush skin with large amounts of cold water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Cover affected area with a clean dressing. Get immediate medical attention.

Eye Contact:
Immediately flush eyes with large amounts of water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Get immediate medical attention.

If Swallowed:
No need for first aid is anticipated.

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 ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition

Aldehydes	During Combustion
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Ketones	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
Ventilate the area with fresh air. 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
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. 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
Avoid skin contact with hot material. For industrial/occupational use only. Not for consumer sale or use. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities
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
MALEIC ANHYDRIDE	108-31-6	ACGIH	TWA(inhalable fraction and vapor):0.01 mg/m3;TWA:0.01 mg/m3	Sensitizer, A4: Not class. as human carcin, Dermal/Respiratory Sensitizer
MALEIC ANHYDRIDE	108-31-6	Malaysia OELs	TWA(8 hours):1 mg/m3(0.25 ppm)	
Paraffin Wax	8002-74-2	ACGIH	TWA(as fume):2 mg/m3	
Paraffin Wax	8002-74-2	Malaysia OELs	TWA(as fume)(8 hours):2 mg/m3	

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 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.

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:
Full Face Shield
Indirect Vented Goggles

Skin/hand protection
No chemical protective gloves are required.

Respiratory protection
None required.

Thermal hazards
Wear heat insulating gloves when handling hot material to prevent thermal burns.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Specific Physical Form:	Waxy Solid
Color	Tan
Odor	Slight Resinous
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	*Not Applicable*
Flash Point	No flash point
Evaporation rate	Nil
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Density	Nil
Density	0.9 g/cm3
Relative Density	0.9 [*Ref Std:*WATER=1]
Water solubility	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	*No Data Available*
Molecular weight	*No Data Available*
Volatile Organic Compounds	0 g/l [*Test Method:*calculated SCAQMD rule 443.1]
VOC Less H2O & Exempt Solvents	0 g/l [*Test Method:*calculated SCAQMD rule 443.1]

Solids Content	<=100 %

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

10.5. Incompatible materials
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:
No health effects are expected.

Skin Contact:
During heating:
Thermal Burns: Signs/symptoms may include intense pain, redness and swelling, and tissue destruction.

Eye Contact:
During heating:
Thermal Burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction.

Ingestion:
No known health effects.

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	Ingestion		No data available; calculated ATE >5,000 mg/kg
Hydrocarbon Resin	Dermal		LD50 estimated to be > 5,000 mg/kg
Hydrocarbon Resin	Ingestion		LD50 estimated to be > 5,000 mg/kg
Styrene-Butadiene Polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Styrene-Butadiene Polymer	Ingestion		LD50 estimated to be > 5,000 mg/kg
Non-Hazardous Resins and Additives	Dermal		LD50 estimated to be > 5,000 mg/kg
Non-Hazardous Resins and Additives	Ingestion	Mouse	LD50 > 8,000 mg/kg
Paraffin Wax	Dermal	Rat	LD50 > 5,000 mg/kg
Paraffin Wax	Ingestion	Rat	LD50 > 5,000 mg/kg
MALEIC ANHYDRIDE	Dermal	Rabbit	LD50 2,620 mg/kg
MALEIC ANHYDRIDE	Ingestion	Rat	LD50 1,030 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Hydrocarbon Resin	Professional judgement	No significant irritation
Non-Hazardous Resins and Additives	Human and animal	No significant irritation
Paraffin Wax	Rabbit	No significant irritation
MALEIC ANHYDRIDE	Human and animal	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Hydrocarbon Resin	Professional judgement	No significant irritation
Non-Hazardous Resins and Additives	Professional judgement	No significant irritation
Paraffin Wax	Rabbit	No significant irritation
MALEIC ANHYDRIDE	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Non-Hazardous Resins and Additives	Human and animal	Not classified
Paraffin Wax	Guinea pig	Not classified
MALEIC ANHYDRIDE	Multiple animal species	Sensitizing

Respiratory Sensitization

Name	Species	Value
MALEIC ANHYDRIDE	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Non-Hazardous Resins and Additives	In Vitro	Not mutagenic
Paraffin Wax	In Vitro	Not mutagenic
MALEIC ANHYDRIDE	In vivo	Not mutagenic
MALEIC ANHYDRIDE	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Non-Hazardous Resins and Additives	Not Specified	Rat	Some positive data exist, but the data are not sufficient for classification
Paraffin Wax	Ingestion	Rat	Not carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
MALEIC ANHYDRIDE	Ingestion	Not classified for female reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
MALEIC ANHYDRIDE	Ingestion	Not classified for male reproduction	Rat	NOAEL 55 mg/kg/day	2 generation
MALEIC ANHYDRIDE	Ingestion	Not classified for development	Rat	NOAEL 140 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
MALEIC ANHYDRIDE	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Paraffin Wax	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 15 mg/kg/day	90 days
Paraffin Wax	Ingestion	hematopoietic system | liver | immune system | skin | endocrine system | bone, teeth, nails, and/or hair | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days
MALEIC ANHYDRIDE	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.0011 mg/l	6 months
MALEIC ANHYDRIDE	Inhalation	endocrine system | hematopoietic system | nervous	Not classified	Rat	NOAEL 0.0098 mg/l	6 months

		system | kidney and/or bladder | heart | liver | eyes				
MALEIC ANHYDRIDE	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 55 mg/kg/day	80 days
MALEIC ANHYDRIDE	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 250 mg/kg/day	183 days
MALEIC ANHYDRIDE	Ingestion	heart | nervous system	Not classified	Rat	NOAEL 600 mg/kg/day	183 days
MALEIC ANHYDRIDE	Ingestion	gastrointestinal tract	Not classified	Rat	NOAEL 150 mg/kg/day	80 days
MALEIC ANHYDRIDE	Ingestion	hematopoietic system	Not classified	Dog	NOAEL 60 mg/kg/day	90 days
MALEIC ANHYDRIDE	Ingestion	skin | endocrine system | immune system | eyes | respiratory system	Not classified	Rat	NOAEL 150 mg/kg/day	80 days

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 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:
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 #	Organism	Type	Exposure	Test Endpoint	Test Result
Paraffin Wax	8002-74-2	Water flea	Estimated	48 hours	Effect Concentration 50%	>10,000 mg/l
Paraffin Wax	8002-74-2	Green algae	Estimated	96 hours	Effect Concentration 50%	>1,000 mg/l
Paraffin Wax	8002-74-2	Rainbow Trout	Estimated	96 hours	Lethal Concentration 50%	>1,000 mg/l
Hydrocarbon Resin	68132-00-3		Data not available or insufficient for classification			

Propylene Copolymers (NJTS Reg. No. 04499600-7066)	Trade Secret		Data not available or insufficient for classification			
Stabilized Rosin Ester (NJTS Reg. No. 04499600-7067)	Trade Secret		Data not available or insufficient for classification			
Styrene-Butadiene Polymer	66070-58-4		Data not available or insufficient for classification			
Non-Hazardous Resins and Additives	Mixture		Data not available or insufficient for classification			
MALEIC ANHYDRIDE	108-31-6	Rainbow Trout	Experimental	96 hours	Lethal Concentration 50%	75 mg/l
MALEIC ANHYDRIDE	108-31-6	Green algae	Estimated	72 hours	Effect Concentration 50%	74.4 mg/l
MALEIC ANHYDRIDE	108-31-6	Water flea	Estimated	48 hours	Effect Concentration 50%	93.8 mg/l
MALEIC ANHYDRIDE	108-31-6	Green algae	Estimated	72 hours	Effect Concentration 10%	11.8 mg/l
MALEIC ANHYDRIDE	108-31-6	Water flea	Experimental	21 days	No obs Effect Conc	10 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Paraffin Wax	8002-74-2	Estimated Biodegradation	28 days	Biological Oxygen Demand	40 % weight	OECD 301F - Manometric Respiro
Hydrocarbon Resin	68132-00-3	Estimated Biodegradation	28 days	Biological Oxygen Demand	0 % BOD/ThBOD	Other methods
Propylene Copolymers (NJTS Reg. No. 04499600-7066)	Trade Secret	Data not availbl-insufficient			N/A	
Stabilized Rosin Ester (NJTS Reg. No. 04499600-7067)	Trade Secret	Data not availbl-insufficient			N/A	
Styrene-Butadiene Polymer	66070-58-4	Data not availbl-insufficient			N/A	

Non-Hazardous Resins and Additives	Mixture	Data not availbl-insufficient			N/A	
MALEIC ANHYDRIDE	108-31-6	Experimental Hydrolysis		Hydrolytic half-life	22 seconds (t 1/2)	Other methods
MALEIC ANHYDRIDE	108-31-6	Estimated Biodegradation	25 days	Carbon dioxide evolution	>90 % weight	OECD 301B - Mod. Sturm or CO2

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Paraffin Wax	8002-74-2	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	10.2	Est: Octanol-water part. coeff
Hydrocarbon Resin	68132-00-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Propylene Copolymers (NJTS Reg. No. 04499600-7066)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Stabilized Rosin Ester (NJTS Reg. No. 04499600-7067)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Styrene-Butadiene Polymer	66070-58-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Non-Hazardous Resins and Additives	Mixture	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
MALEIC ANHYDRIDE	108-31-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-2.61	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

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

Not hazardous for transportation.

Marine Transport (IMDG)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number: None assigned.
Proper Shipping Name: None assigned.
Technical Name: None assigned.
Hazard Class/Division: None assigned.
Subsidiary Risk: None assigned.
Packing Group: None assigned.
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 new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory.

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