Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

3M™ Scotch-Weld™ Structural Void Filling Compound EC-3500-2 PMF

Product Identification Numbers

FS-9100-3856-1

7000080042

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Core Reinforcement Adhesive

1.3. Details of the supplier of the safety data sheet

Address: 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.
Telephone: +44 (0)1344 858 000
E Mail: tox.uk@mmm.com
Website: www.3M.com/uk

1.4. Emergency telephone number

+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.

CLASSIFICATION:

Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Respiratory Sensitization, Category 1 - Resp. Sens. 1; H334
Skin Sensitization, Category 1A - Skin Sens. 1A; H317
Germ Cell Mutagenicity, Category 2 - Muta. 2; H341
Hazardous to the Aquatic Environment (Chronic), Category 3 - Aquatic Chronic 3; H412

For full text of H phrases, see Section 16.

2.2. Label elements
CLP REGULATION (EC) No 1272/2008

SIGNAL WORD
DANGER.

Symbols
GHS05 (Corrosion) |GHS08 (Health Hazard) |

Pictograms

Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	246-644-8	10 - 30
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4		< 18.5
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	240-260-4	5 - 15
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	225-716-2	< 6.5
maleic anhydride	108-31-6	203-571-6	0.1 - 1

HAZARD STATEMENTS:

H315	Causes skin irritation.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H412	Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P261B	Avoid breathing dust.
P280B	Wear protective gloves and eye/face protection.

Response:

P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310	Immediately call a POISON CENTRE or doctor/physician.

Disposal:

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

Contains 2% of components with unknown hazards to the aquatic environment.

Notes on labelling

CASRN 25134-21-8 is classified as toxic via inhalation. When incorporated into this product, this substance cannot become aerosolized. Therefore, the classification is not applicable for this material when used as intended.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Glass, oxide, chemicals	(CAS-No.) 65997-17-3 (EC-No.) 266-046-0	10 - 30	Substance with a national occupational exposure limit
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	(CAS-No.) 25134-21-8 (EC-No.) 246-644-8 (REACH-No.) 01-2119979584-19	10 - 30	Acute Tox. 3, H331 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317
Phenol-formaldehyde polymer, glycidyl ether	(CAS-No.) 28064-14-4	< 18.5	Skin Sens. 1, H317 Aquatic Chronic 2, H411
1,6-Bis(2,3-epoxypropoxy)hexane	(CAS-No.) 16096-31-4 (EC-No.) 240-260-4 (REACH-No.) 01-2119463471-41	5 - 15	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317 Aquatic Chronic 3, H412
Aluminium hydroxide	(CAS-No.) 21645-51-2 (EC-No.) 244-492-7 (REACH-No.) 01-2119529246-39	7 - 13	Substance with a national occupational exposure limit
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	(CAS-No.) 5026-74-4 (EC-No.) 225-716-2	< 6.5	Aquatic Chronic 2, H411 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Muta. 2, H341
Siloxanes and Silicones, di-Me, reaction products with silica	(CAS-No.) 67762-90-7	1 - 5	Substance with a national occupational exposure limit
Carbon black	(CAS-No.) 1333-86-4	0.1 - 1	Substance with a national occupational

	(EC-No.) 215-609-9 (REACH-No.) 01-2119384822-32		exposure limit
maleic anhydride	(CAS-No.) 108-31-6 (EC-No.) 203-571-6	0.1 - 1	EUH071 Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372

Please see section 16 for the full text of any H statements referred to in this section

Specific Concentration Limits

Ingredient	Identifier(s)	Specific Concentration Limits
maleic anhydride	(CAS-No.) 108-31-6 (EC-No.) 203-571-6	(C >= 0.001%) Skin Sens. 1A, H317

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

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 for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately 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
No critical symptoms or effects. 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. Extinguishing media
In case of fire: Use a carbon dioxide or dry chemical extinguisher 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.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.

5.3. Advice 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. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. 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. Use wet sweeping compound or water to avoid dusting. Sweep up. 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.

6.4. Reference to other sections
Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid skin contact with hot material. Avoid breathing of dust created by cutting, sanding, grinding or machining. For industrial/occupational use only. Not for consumer sale or use. Do not use in a confined area with minimal air exchange. Do not handle until all safety precautions have been read and understood. 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. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store away from heat. Store away from acids. Store away from oxidising agents.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

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
maleic anhydride	108-31-6	UK HSC	TWA: 1 mg/m³; STEL: 3	Respiratory Sensitizer

			mg/m³
Carbon black	1333-86-4	UK HSC	TWA: 3.5 mg/m³; STEL: 7 mg/m³
DUST, INERT OR NUISANCE	21645-51-2	UK HSC	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3
Glass, oxide, chemicals	65997-17-3	UK HSC	TWA(as fiber):5 mg/m3(1 fibers/ml)
Glass, oxide, chemicals	65997-17-3	Manufacturer determined	TWA(as non-fibrous, respirable)(8 hours):3 mg/m3;TWA(as non-fibrous, inhalable fraction)(8 hours):10 mg/m3
Silicon dioxide	67762-90-7	UK HSC	TWA(as respirable dust):2.4 mg/m3;TWA(as inhalable dust):6 mg/m3

UK HSC : UK Health and Safety Commission
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

Biological limit values
No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

Derived no effect level (DNEL)

Ingredient	Degradation Product	Population	Human exposure pattern	DNEL
1,6-Bis(2,3-epoxypropoxy)hexane		Worker	Dermal, Long-term exposure (8 hours), Local effects	22.6 mg/cm2
1,6-Bis(2,3-epoxypropoxy)hexane		Worker	Dermal, Long-term exposure (8 hours), Systemic effects	2.8 mg/kg bw/d
1,6-Bis(2,3-epoxypropoxy)hexane		Worker	Inhalation, Long-term exposure (8 hours), Local effects	0.44 mg/m³
1,6-Bis(2,3-epoxypropoxy)hexane		Worker	Inhalation, Long-term exposure (8 hours), Systemic effects	4.9 mg/m³

Predicted no effect concentrations (PNEC)

Ingredient	Degradation Product	Compartment	PNEC
1,6-Bis(2,3-epoxypropoxy)hexane		Freshwater	0.0115 mg/l
1,6-Bis(2,3-epoxypropoxy)hexane		Freshwater sediments	0.283 mg/kg d.w.
1,6-Bis(2,3-epoxypropoxy)hexane		Intermittent releases to water	0.115 mg/l
1,6-Bis(2,3-epoxypropoxy)hexane		Marine water	1.15 mg/l
1,6-Bis(2,3-epoxypropoxy)hexane		Marine water sediments	0.283 mg/kg d.w.

Recommended monitoring procedures: Information on recommended monitoring procedures can be obtained from UK HSC

8.2. Exposure controls

In addition, refer to the annex for more information.

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:
Full face shield.
Indirect vented goggles.

Applicable Norms/Standards
Use eye/face protection conforming to EN 166

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Polymer laminate	No data available	No data available

Applicable Norms/Standards
Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

Applicable Norms/Standards
Use a respirator conforming to EN 140 or EN 136: filter types A & P

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

Applicable Norms/Standards
Use gloves tested to EN 407

8.2.3. Environmental exposure controls
Refer to Annex

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Black paste
Colour	Black
Odor	Acrid
Odour threshold	*No data available.*
Melting point/freezing point	*No data available.*
Boiling point/boiling range	*Not applicable.*
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	*Not applicable.*
Flammable Limits(UEL)	*Not applicable.*
Flash point	*Not applicable.*
Autoignition temperature	*Not applicable.*
Decomposition temperature	*No data available.*
pH	
Kinematic Viscosity	*No data available.*
Water solubility	*No data available.*
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	*Not applicable.*
Density	0.65 - 0.8 g/cm3 [@ 20 ºC] [*Ref Std:*WATER=1]
Relative density	0.65 - 0.8 [@ 20 ºC] [*Test Method:*Estimated] [*Ref Std:*WATER=1]
Relative Vapor Density	*Not applicable.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*Not applicable.*
Percent volatile	1 % [@ 20 ºC] [*Test Method:*Estimated]

SECTION 10: Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

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 acids.

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 agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from internal hazard assessments.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
Allergic respiratory reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest. Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, nose and throat pain. May cause additional health effects (see below).

Skin contact
Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact
Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion
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:

Genotoxicity:
Genotoxicity and Mutagenicity: May interact with genetic material and possibly alter gene expression.

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 >5,000 mg/kg

Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE >12.5 mg/l
Overall product	Ingestion		No data available; calculated ATE300 - 2,000 mg/kg
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Dermal	Rat	LD50 4,920 mg/kg
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Inhalation-Dust/Mist (4 hours)	Rat	LC50 < 0.75 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Ingestion	Rat	LD50 958 mg/kg
Glass, oxide, chemicals	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass, oxide, chemicals	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Phenol-formaldehyde polymer, glycidyl ether	Dermal	Rabbit	LD50 > 6,000 mg/kg
Phenol-formaldehyde polymer, glycidyl ether	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.7 mg/l
Phenol-formaldehyde polymer, glycidyl ether	Ingestion	Rat	LD50 > 4,000 mg/kg
Aluminium hydroxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminium hydroxide	Ingestion	Rat	LD50 > 5,000 mg/kg
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	Dermal	Rabbit	LD50 > 4,000 mg/kg
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	Ingestion	Rat	LD50 500-5000 mg/kg
1,6-Bis(2,3-epoxypropoxy)hexane	Dermal	Rat	LD50 > 2,000 mg/kg
1,6-Bis(2,3-epoxypropoxy)hexane	Ingestion	Rat	LD50 3,741 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
maleic anhydride	Dermal	Rabbit	LD50 2,620 mg/kg
maleic anhydride	Ingestion	Rat	LD50 1,030 mg/kg
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Rabbit	Irritant
Glass, oxide, chemicals	Professional judgement	No significant irritation
Phenol-formaldehyde polymer, glycidyl ether	Rabbit	Minimal irritation
Aluminium hydroxide	Rabbit	No significant irritation
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	Rabbit	Irritant
1,6-Bis(2,3-epoxypropoxy)hexane	Rabbit	Irritant
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
maleic anhydride	Human and animal	Corrosive
Carbon black	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Rabbit	Corrosive
Glass, oxide, chemicals	Professional judgement	No significant irritation
Phenol-formaldehyde polymer, glycidyl ether	Rabbit	Mild irritant
Aluminium hydroxide	Rabbit	No significant irritation
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	Rabbit	Severe irritant

1,6-Bis(2,3-epoxypropoxy)hexane	Rabbit	Severe irritant
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
maleic anhydride	Rabbit	Corrosive
Carbon black	Rabbit	No significant irritation

Skin Sensitisation

Name	Species	Value
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	Human	Sensitising
Phenol-formaldehyde polymer, glycidyl ether	Human and animal	Sensitising
Aluminium hydroxide	Guinea pig	Not classified
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	Guinea pig	Sensitising
1,6-Bis(2,3-epoxypropoxy)hexane	Multiple animal species	Sensitising
Siloxanes and Silicones, di-Me, reaction products with silica	Human and animal	Not classified
maleic anhydride	Multiple animal species	Sensitising

Respiratory Sensitisation

Name	Species	Value
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	similar compounds	Sensitising
maleic anhydride	Human	Sensitising

Germ Cell Mutagenicity

Name	Route	Value
Glass, oxide, chemicals	In Vitro	Some positive data exist, but the data are not sufficient for classification
Phenol-formaldehyde polymer, glycidyl ether	In Vitro	Some positive data exist, but the data are not sufficient for classification
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	In Vitro	Some positive data exist, but the data are not sufficient for classification
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	In vivo	Mutagenic
Siloxanes and Silicones, di-Me, reaction products with silica	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
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Glass, oxide, chemicals	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Aluminium hydroxide	Not specified.	Multiple animal species	Not carcinogenic
Siloxanes and Silicones, di-Me, reaction products with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Carbon black	Dermal	Mouse	Not carcinogenic

Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Aluminium hydroxide	Ingestion	Not classified for development	Rat	NOAEL 768 mg/kg/day	during organogenesis
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
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
Glass, oxide, chemicals	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
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 system | kidney and/or bladder | heart | liver | eyes	Not classified	Rat	NOAEL 0.0098 mg/l	6 months
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
Carbon black	Inhalation	pneumoconiosis	Not classified	Human	NOAEL Not	occupational

					available	exposure

Aspiration Hazard
For the component/components, either no data is currently available or the data is 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.

11.2. Information on other hazards

This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

SECTION 12: Ecological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Green algae	Experimental	72 hours	EC50	>100 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Water flea	Experimental	48 hours	EC50	>100 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Water flea	Analogous Compound	21 days	NOEC	20 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Green algae	Experimental	72 hours	NOEC	66.7 mg/l
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Activated sludge	Experimental	3 hours	EC50	311.82 mg/l
Glass, oxide, chemicals	65997-17-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
Glass, oxide, chemicals	65997-17-3	Water flea	Experimental	72 hours	EC50	>1,000 mg/l
Glass, oxide, chemicals	65997-17-3	Zebra Fish	Experimental	96 hours	LC50	>1,000 mg/l
Glass, oxide, chemicals	65997-17-3	Green algae	Experimental	72 hours	NOEC	>=1,000 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Golden Orfe	Experimental	96 hours	LC50	5.7 mg/l
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Water flea	Experimental	48 hours	EC50	3.5 mg/l
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Activated sludge	Experimental	3 hours	IC50	>100 mg/l
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Rainbow trout	Experimental	96 hours	LC50	30 mg/l
Aluminium hydroxide	21645-51-2	Fish other	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l

Aluminium hydroxide	21645-51-2	Green Algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
Aluminium hydroxide	21645-51-2	Green Algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Water flea	Estimated	48 hours	EC50	18 mg/l
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Bacteria	Experimental	16 hours	EC50	>=10 mg/l
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Common Carp	Experimental	96 hours	LC50	4.2 mg/l
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Green algae	Experimental	96 hours	EC50	13 mg/l
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Green algae	Experimental	96 hours	NOEC	4.2 mg/l
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Water flea	Experimental	21 days	NOEC	0.42 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7		Data not available or insufficient for classification			N/A
Carbon black	1333-86-4	Activated sludge	Experimental	3 hours	EC50	>=100 mg/l
Carbon black	1333-86-4		Data not available or insufficient for classification			N/A
maleic anhydride	108-31-6	Green algae	Estimated	72 hours	EC50	74.4 mg/l
maleic anhydride	108-31-6	Water flea	Estimated	48 hours	EC50	93.8 mg/l
maleic anhydride	108-31-6	Bacteria	Experimental	18 hours	EC10	44.6 mg/l
maleic anhydride	108-31-6	Rainbow trout	Experimental	96 hours	LC50	75 mg/l
maleic anhydride	108-31-6	Green algae	Estimated	72 hours	EC10	11.8 mg/l
maleic anhydride	108-31-6	Water flea	Experimental	21 days	NOEC	10 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Experimental Hydrolysis		Hydrolytic half-life	5 minutes (t 1/2)	OECD 111 Hydrolysis func of pH
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Experimental Biodegradation	28 days	BOD	0 % BOD/ThBOD	OECD 301C - MITI test (I)
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	1 %removal of DOC	OECD 303A - Simulated Aerobic
Glass, oxide, chemicals	65997-17-3	Data not availbl-insufficient			N/A	
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Laboratory Biodegradation	28 days	CO2 evolution	10-16 %CO2 evolution/THCO2 evolution (does not pass 10-day window)	OECD 301B - Modified sturm or CO2

1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Estimated Hydrolysis		Hydrolytic half-life	6.87 days (t 1/2)	Non-standard method
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Experimental Biodegradation	28 days	BOD	47 % BOD/ThBOD	OECD 301D - Closed bottle test
Aluminium hydroxide	21645-51-2	Data not availbl-insufficient			N/A	
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Experimental Hydrolysis		Hydrolytic half-life	4.1 days (t 1/2)	Non-standard method
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Experimental Biodegradation	29 days	CO2 evolution	≤10 % weight	OECD 301B - Modified sturm or CO2
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not availbl-insufficient			N/A	
Carbon black	1333-86-4	Data not availbl-insufficient			N/A	
maleic anhydride	108-31-6	Experimental Hydrolysis		Hydrolytic half-life	22 seconds (t 1/2)	Non-standard method
maleic anhydride	108-31-6	Estimated Biodegradation	25 days	CO2 evolution	>90 % weight	OECD 301B - Modified sturm or CO2

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Hydrolysis product BCF-Carp	14 days	Bioaccumulation factor	4.7	OECD305-Bioconcentration
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Experimental Bioconcentration		Log Kow	1.7	830.7570 Part. Coef by LC
Glass, oxide, chemicals	65997-17-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Phenol-formaldehyde polymer, glycidyl ether	28064-14-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
1,6-Bis(2,3-epoxypropoxy)hexane	16096-31-4	Estimated Bioconcentration		Bioaccumulation factor	2.9	Estimated: Bioconcentration factor
Aluminium hydroxide	21645-51-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
p-(2,3-epoxypropoxy)-N,N-bis(2,3-epoxypropyl)aniline	5026-74-4	Estimated Bioconcentration		Log Kow	0.87	Non-standard method
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Carbon black	1333-86-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
maleic anhydride	108-31-6	Experimental Bioconcentration		Log Kow	-2.61	Non-standard method

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
1,2,3,6-Tetrahydromethyl-3,6-methanophthalic anhydride	25134-21-8	Modeled Mobility in Soil	Koc	10 l/kg	Episuite™

12.5. Results of the PBT and vPvB assessment

This material does not contain any substances that are assessed to be a PBT or vPvB

12.6. Endocrine disrupting properties

This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. 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.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)

08 04 09*	Waste adhesives and sealants containing organic solvents or other dangerous substances
20 01 27*	Paint, inks, adhesives and resins containing dangerous substances

SECTION 14: Transportation information

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number	UN1845	UN1845	UN1845
14.2 UN proper shipping name	CARBON DIOXIDE, SOLID, AS COOLANT	CARBON DIOXIDE, SOLID	CARBON DIOXIDE, SOLID, AS COOLANT
14.3 Transport hazard class(es)	Not applicable.	Not applicable.	Not applicable.
14.4 Packing group	Not applicable.	Not applicable.	Not applicable.
14.5 Environmental hazards	Not applicable.	Not applicable	Not applicable.
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code	No data available.	No data available.	No data available.

Control Temperature	Not applicable.	Not applicable.	Not applicable.
Emergency Temperature	Not applicable.	Not applicable.	Not applicable.
ADR Tunnel Code	Not applicable.	Not applicable.	Not applicable.
ADR Classification Code	Not applicable.	Not applicable.	Not applicable.
ADR Transport Category	Not applicable.	Not applicable.	Not applicable.
ADR Multiplier	Not applicable.	Not applicable.	Not applicable.
IMDG Segregation Code	Not applicable.	Not applicable.	Not applicable.

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

SECTION 15: Regulatory information

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

Carcinogenicity

Ingredient	CAS Nbr	Classification	Regulation
Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Global inventory status

Contact 3M for more 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 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. All required components of this product are listed on the active portion of the TSCA Inventory.

15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

SECTION 16: Other information

List of relevant H statements

EUH071 Corrosive to the respiratory tract.

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Revision information:
EU Section 09: pH information information was added.
Formulation: Section 16: Annex information was modified.
Industrial Mixing and Application: Section 16: Annex information was modified.
CLP: Ingredient table information was modified.
Label: CLP Classification information was modified.
Label: CLP Percent Unknown information was deleted.
Label: CLP Percent Unknown information was modified.
Section 03: Composition table % Column heading information was added.
Section 3: Composition/ Information of ingredients table information was modified.
Section 03: SCL table information was added.
Section 03: Substance not applicable information was added.
Section 04: Information on toxicological effects information was modified.
Section 5: Hazardous combustion products table information was modified.
Section 7: Precautions safe handling information information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 09: Color information was added.
Section 9: Evaporation Rate information information was deleted.
Section 9: Explosive properties information information was deleted.
Section 09: Kinematic Viscosity information information was added.
Section 9: Melting point information information was modified.
Section 09: Odor information was added.
Sections 3 and 9: Odour, colour, grade information information was deleted.
Section 9: Oxidising properties information information was deleted.
Section 9: pH information information was deleted.
Section 9: Property description for optional properties information was modified.
Section 9: Vapour density value information was added.
Section 9: Vapour density value information was deleted.
Section 9: Viscosity information information was deleted.
Section 11: Acute Toxicity table information was modified.
Section 11: Classification disclaimer information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: No endocrine disruptor information available warning information was added.
Section 11: Reproductive and/or Developmental Effects text information was deleted.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Respiratory Sensitization Table information was modified.
Section 11: Serious Eye Damage/Irritation Table information was modified.
Section 11: Skin Corrosion/Irritation Table information was modified.
Section 11: Skin Sensitization Table information was modified.
Section 11: Target Organs - Repeated Table information was modified.
Section 11: Target Organs - Single Table information was modified.
Section 12: 12.6. Endocrine Disrupting Properties information was added.
Section 12: 12.7. Other adverse effects information was modified.

Section 12: Component ecotoxicity information information was modified.
Section 12: Contact manufacturer for more detail. information was deleted.
Section 12: Mobility in soil information information was added.
Section 12: No endocrine disruptor information available warning information was added.
Section 12: No PBT/vPvB information available warning information was modified.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 13: 13.1. Waste disposal note information was modified.
Section 14 Classification Code – Main Heading information was added.
Section 14 Classification Code – Regulation Data information was added.
Section 14 Control Temperature – Main Heading information was added.
Section 14 Control Temperature – Regulation Data information was added.
Section 14 Disclaimer Information information was added.
Section 14 Emergency Temperature – Main Heading information was added.
Section 14 Emergency Temperature – Regulation Data information was added.
Section 14 Hazard Class + Sub Risk – Main Heading information was added.
Section 14 Hazard Class + Sub Risk – Regulation Data information was added.
Section 14 Hazardous/Not Hazardous for Transportation information was added.
Section 14 Multiplier – Main Heading information was added.
Section 14 Multiplier – Regulation Data information was added.
Section 14 Other Dangerous Goods – Main Heading information was added.
Section 14 Other Dangerous Goods – Regulation Data information was added.
Section 14 Packing Group – Main Heading information was added.
Section 14 Packing Group – Regulation Data information was added.
Section 14 Proper Shipping Name information was added.
Section 14 Regulations – Main Headings information was added.
Section 14 Segregation – Regulation Data information was added.
Section 14 Segregation Code – Main Heading information was added.
Section 14 Special Precautions – Main Heading information was added.
Section 14 Special Precautions – Regulation Data information was added.
Section 14 Transport Category – Main Heading information was added.
Section 14 Transport Category – Regulation Data information was added.
Section 14 Transport in bulk – Regulation Data information was added.
Section 14 Transport in bulk according to Annex II of Marpol and the IBC Code – Main Heading information was added.
Section 14 Tunnel Code – Main Heading information was added.
Section 14 Tunnel Code – Regulation Data information was added.
Section 14 UN Number Column data information was added.
Section 14 UN Number information was added.
Section 15: Chemical Safety Assessment information was modified.
Section 15: Regulations - Inventories information was modified.
Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was modified.
Sectio 16: UK disclaimer information was deleted.

Annex

1. Title	
Substance identification	1,6-Bis(2,3-epoxypropoxy)hexane; EC No. 240-260-4; CAS Nbr 16096-31-4;
Exposure Scenario Name	Formulation
Lifecycle Stage	Formulation or re-packing
Contributing activities	PROC 08a -Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

	PROC 08b -Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC 09 -Transfer of substance or mixture into small containers (dedicated filling line, including weighing) ERC 02 -Formulation into mixture
Processes, tasks and activities covered	Open sampling. Transfers with dedicated controls, including loading, filling, dumping, bagging. Transfers without dedicated controls, including loading, filling, dumping, bagging.
2. Operational conditions and risk management measures	
Operating Conditions	**Physical state:**Liquid. **General operating conditions:** Continuous release; Duration of use: 4 hours/day; Emission days per year: 365 days/year; Indoor use with Local Exhaust Ventilation;
Risk management measures	Under the operational conditions described above the following risk management measures apply: **General risk management measures:** **Human health:** Face shield; Goggles - Chemical resistant; Protective Gloves - Chemical resistant. Refer to Section 8 of the SDS for specific glove material.; **Environmental:** None needed;
Waste management measures	Incinerate in a permitted hazardous waste incinerator;
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.

1. Title	
Substance identification	1,6-Bis(2,3-epoxypropoxy)hexane; EC No. 240-260-4; CAS Nbr 16096-31-4;
Exposure Scenario Name	Industrial Mixing and Application
Lifecycle Stage	Use at industrial sites
Contributing activities	PROC 08a -Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC 08b -Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC 09 -Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC 13 -Treatment of articles by dipping and pouring ERC 06d -Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
Processes, tasks and activities covered	Application of product through a mixing nozzle Open sampling. Transfers with dedicated controls, including loading, filling, dumping, bagging. Transfers without dedicated controls, including loading, filling, dumping, bagging.
2. Operational conditions and risk management measures	
Operating Conditions	**Physical state:**Liquid. **General operating conditions:** Continuous release; Duration of use: 4 hours/day; Emission days per year: 365 days/year; Indoor use with Local Exhaust Ventilation;

Risk management measures	Under the operational conditions described above the following risk management measures apply: **General risk management measures:** **Human health:** Face shield; Goggles - Chemical resistant; Protective Gloves - Chemical resistant. Refer to Section 8 of the SDS for specific glove material.; **Environmental:** None needed;
Waste management measures	Incinerate in a permitted hazardous waste incinerator;
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.

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