# thermo scientific

# SAFETY DATA SHEET

MOEL's Public Notice No. 2016-19 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

WAI4 - KGHS - KOREAN Issue Date 05-Sep-2019 Revision Date 05-Sep-2019 Revision Number 1

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product Identifier** 

Product Name Silica Reagent #1

Product No 2030RE-1

Pure substance/mixture Mixture

Contains Sulfuric Acid

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

Recommended Use Use as laboratory reagent

Uses advised against No Information available

**Supplier** 

Fisher Scientific Korea Thermo Fisher Scientific© D5,D6, Incheon Airport Logistics Water and Lab Products

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**CHEMTREC:** 1-800-424-9300 or + 1-703-527-3887 **Korea:** 00-308-13-2549 (24 hours a day, 7 days a week)

Made in USA

# SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Physical hazards

Substances/mixtures corrosive to metal Category 1

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#### **Health hazards**

Skin Corrosion/Irritation Category 1 Serious Eye Damage/Eye Irritation Category 1 Specific target organ toxicity - (single exposure)

Category 3

#### **Environmental hazards**

Based on available data, the classification criteria are not met

#### **Label Elements**



#### Signal Word

#### **Danger**

#### **Hazard Statements**

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

H318 - Causes serious eye damage

#### **Precautionary Statements**

#### Prevention

P201 - Obtain special instructions before use

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed skin thoroughly after handling

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

P234 - Keep only in original container

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

#### Response

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position 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 rinsina

P310 - Immediately call a POISON CENTER or doctor/physician

P363 - Wash contaminated clothing before reuse

P390 - Absorb spillage to prevent material damage

P321 - Specific treatment (see supplemental first aid instructions on this label)

P312 - Call a POISON CENTER or doctor/ physician if you feel unwell

# Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P406 - Store in corrosive resistant stainless steel container with a resistant inliner

P405 - Store locked up

# Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

#### Other Hazards

#### NFPA

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Health	Flammability	Instability	Physical hazards
3	0	0	N/A

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.2. Mixtures

Component	Common Name	CAS-No	Index No.	Weight %
Water	No information available	7732-18-5	KE-35400	60 - 70
Sodium Bisulfate Monohydrate	No information available	10034-88-5	Not listed	>=10 - 20
Sulfuric Acid	No information available	7664-93-9	KE-32570	>=10 - 20
Molybdic Acid	No information available	7782-91-4	KE-25464	>=10 - 20

# **SECTION 4: FIRST AID MEASURES**

First aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Immediate medical attention is required.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Remove and wash

contaminated clothing before re-use. Call a physician immediately.

**Inhalation** If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use

mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory

medical device. Call a physician immediately.

**Ingestion** Do not induce vomiting. Clean mouth with water. Never give anything by mouth to an

unconscious person. Call a physician immediately.

mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory

medical device.

Most important symptoms and effects, both acute and delayed

Most important symptoms and

effects

Causes burns by all exposure routes

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

## **SECTION 5: FIREFIGHTING MEASURES**

#### **Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

#### **Unsuitable Extinguishing Media**

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No information available

# Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

#### **Explosion Data**

Sensitivity to Mechanical Impact None Sensitivity to Static Discharge None

#### **Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

#### Personal Precautions, Protective Equipment and Emergency Procedures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to

safe areas. Keep people away from and upwind of spill/leak.

**Environmental Precautions** Should not be released into the environment. See Section 12 for additional ecological

information.

#### Methods and Material for Containment and Cleaning Up

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

## SECTION 7: HANDLING AND STORAGE

#### **Precautions for Safe Handling**

**Handling** Wear personal protective equipment

Do not get in eyes, on skin, or on clothing Use only under a chemical fume hood Do not breathe vapors or spray mist

Do not ingest

#### Conditions for Safe Storage, Including any Incompatibilities

Storage Corrosives area

Keep containers tightly closed in a dry, cool and well-ventilated place

Incompatible Products No information available

#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **Control Parameters**

Component	CAS-No	Korea	ACGIH TLV	OSHA PEL	
Water	7732-18-5	Not listed	Not listed	Not listed	
Sodium Bisulfate Monohydrate	10034-88-5	Not listed	Not listed	Not listed	
Sulfuric Acid	7664-93-9	STEL: 0.6 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	(Vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	
Molybdic Acid	7782-91-4	Not listed	TWA: 0.5 mg/m <sup>3</sup>	(Vacated) TWA: 5 mg/m <sup>3</sup>	

Component	CAS-No	European Union	The United Kingdom	Germany
Water	7732-18-5	Not listed	Not listed	Not listed
Sodium Bisulfate	10034-88-5	Not listed	Not listed	Not listed

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Monohydrate				
Sulfuric Acid	7664-93-9	TWA: 0.05 mg/m <sup>3</sup> (8h)	STEL: 0.15 mg/m <sup>3</sup> 15 min	TWA: 0.1 mg/m <sup>3</sup> (8
			TWA: 0.05 mg/m <sup>3</sup> 8 hr	Stunden). AGW - exposure
			_	factor 1
				TWA: 0.1 mg/m <sup>3</sup> (8
				Stunden). MAK
				Höhepunkt: 0.1 mg/m <sup>3</sup>
Molybdic Acid	7782-91-4	Not listed	STEL: 10 mg/m <sup>3</sup> 15 min	Not listed
			TWA: 5 mg/m <sup>3</sup> 8 hr	

**Biological Exposure Indices** 

Component CAS-No		Biological Exposure Indices
Water	7732-18-5	Not listed
Sodium Bisulfate Monohydrate	10034-88-5	Not listed
Sulfuric Acid	7664-93-9	Not listed
Molybdic Acid	7782-91-4	Not listed

#### **Appropriate engineering controls**

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location

#### Individual protection measures, such as personal protective equipment

**Personal protective equipment** Use only those certified by the Korea Occupational Safety and Health Administration.

**Eye/face Protection** Wear chemical splash goggles and face shield. If splashes are likely to occur, wear:.

Face-shield.

**Skin and Body Protection** Wear protective gloves/clothing.

**Respiratory Protection**None under normal use conditions. In case of inadequate ventilation wear respiratory

protection.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls No information available

# SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State Liquid
Appearance Clear
Odor None

Odor Threshold No information available

**pH** -0.28 **PH Range** -0.78 - 0.22

Property Values Remarks • Method

Melting point/freezing pointNo information availableBoiling Point/Range100 °C / 212 °F

Flash Point (High in °C) N/A

Evaporation Rate
No information available
Flammability (solid, gas)
No information available

Flammability Limit in Air

Upper flammability limit:
Lower flammability limit:
Vapor pressure
Vapor Density

No information available
No information available
No information available

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Specific Gravity No information available

Water Solubility Soluble in water

Solubility in other solvents

Partition coefficient

No information available
No information available

Autoignition Temperature

Decomposition TemperatureNo information availableKinematic viscosityNo information availableDynamic viscosityNo information availableExplosive PropertiesNo information availableOxidizing PropertiesNo information available

#### **Other Information**

Softening PointNo information availableMolecular WeightNo information availableVOC Content(%)No information availableDensityNo Information availableBulk DensityNo information available

## **SECTION 10: STABILITY AND REACTIVITY**

#### Reactivity

No Information available

#### **Chemical Stability**

Stable under normal conditions

#### **Possibility of Hazardous Reactions**

None under normal processing

#### **Conditions to Avoid**

Extremes of temperature and direct sunlight.

#### **Incompatible Materials**

No information available

#### **Hazardous Decomposition Products**

Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 11: TOXICOLOGICAL INFORMATION

#### **Product Information**

#### Information on likely routes of exposure

Inhalation Not an expected route of exposure.

Ingestion May be harmful if swallowed.

**Eyes** Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including

blindness.

Skin Avoid contact with skin. Causes burns. Skin corrosion/irritation.

#### Information on Toxicological Effects

**Symptoms** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

Possible perforation of stomach or esophagus should be investigated Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

## Delayed and immediate effects as well as chronic effects from short and long-term exposure

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**(b) skin corrosion/irritation**; Category 1. A.

Sensitization No information available

Mutagenic Effects No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA
Sulfuric Acid	A2	Group 1	Known	X
7664-93-9		•		
Molybdic Acid	A3	-	-	-
7782-91-4				

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)
IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program) NTP: (National Toxicity Program) Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

Reproductive Effects No information available

STOT - single exposure No information available

STOT - repeated exposure No information available

Target Organs None known.

Aspiration hazard No information available

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 16050 mg/kg ATEmix (inhalation-dust/mist) 1.9 mg/L

# **SECTION 12: ECOLOGICAL INFORMATION**

#### **Ecotoxicity**

25% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Component	Freshwater Algae	Freshwater Fish	Water Flea
Sulfuric Acid	-	LC50: > 500 mg/L, 96h static	EC50: = 29 mg/L, 24h (Daphnia
7664-93-9		(Brachydanio rerio)	magna)

#### Persistence and Degradability

No information available

#### **Bioaccumulation/ Accumulation**

No information available

#### Mobility

No information available.

#### Other adverse effects

No information available

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# **SECTION 13: DISPOSAL CONSIDERATIONS**

Waste treatment methods

Waste Disposal Methods Disposal should be in accordance with applicable regional, national and local laws and

regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

## SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport

**UN-No** UN2796

Proper Shipping Name SULPHURIC ACID

Hazard Class 8
Packing Group ||

<u>IATA</u>

**UN-No** UN2796

Proper Shipping Name SULPHURIC ACID

Hazard Class 8
Packing Group

IMDG/IMO

**UN-No** UN2796

Proper Shipping Name SULPHURIC ACID

Hazard Class 8
Packing Group

Marine Pollutant Not Applicable

Special Precautions for User No special precautions required

## **SECTION 15: REGULATORY INFORMATION**

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

Legend: X - Listed '-' - Not Listed

#### International Inventories

Component	CAS-No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	AICS
Water	7732-18-5	KE-35400	X	231-791-2	X	X	-	Х	-	Х
Sodium Bisulfate Monohydrate	10034-88-5	-	-	-	Х	-	-	Х	-	Х
Sulfuric Acid	7664-93-9	KE-32570	Χ	231-639-5	X	Х	-	Х	Х	Х
Molybdic Acid	7782-91-4	KE-25464	X	231-970-5	X	Х	-	Х	Х	Х

Component	CAS-No	Seveso III Directive		Rotterdam	Basel Convention
		(2012/18/EC) -	(2012/18/EC) -	Convention (PIC)	(Hazardous Waste)
		Qualifying Quantities	Qualifying Quantities		
		for Major Accident	for Safety Report		
		Notification	Requirements		
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Sodium Bisulfate	10034-88-5	Not applicable	Not applicable	Not applicable	Not applicable
Monohydrate					
Sulfuric Acid	7664-93-9	Not applicable	Not applicable	Not applicable	Annex I - Y34
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Water	7732-18-5	Listed	Not applicable	Not applicable

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Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	Listed	Not applicable	Not applicable
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable

# **Korean National Regulations**

Component	CAS-No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Water	7732-18-5	Annex 1 - KE-35400 Exempt (Index No. 25)	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	Annex 1 - KE-32570	Not applicable	Listed
Molybdic Acid	7782-91-4	Annex 1 - KE-25464	Not applicable	Not applicable

Component	CAS-No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	97-1-405 (>10%)	Not applicable	Not applicable
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable

Component	CAS-No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	>10%	20000 kg/yr	1500000 kg/yr
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable

Component	CAS-No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	Not applicable	Not applicable	Not applicable
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable

Component	CAS-No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	Listed	Not applicable	Not applicable
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable

Component	CAS-No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	Listed	Listed	Not applicable
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable

Component	CAS-No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable

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Sulfuric Acid	7664-93-9	20000 kg	STEL: 0.6 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>	Formulation containing 0.1% or more strong acid
			_	below pH 2.0
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable

#### National Fire Association - Dangerous Substances Minimum quantity requiring a permit

Component	CAS-No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

#### **Control Parameters**

Component	CAS-No	Korea	Biological Exposure Indices
Water	7732-18-5	Not listed	Not listed
Sodium Bisulfate Monohydrate	10034-88-5	Not listed	Not listed
Sulfuric Acid	7664-93-9	STEL: 0.6 mg/m <sup>3</sup>	Not listed
		TWA: 0.2 mg/m <sup>3</sup>	
Molybdic Acid	7782-91-4	Not listed	Not listed

#### **US Management Information**

**OSHA** - Occupational Safety and Health Administration

Not applicable

Component	CAS-No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Water	7732-18-5	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	Not applicable	Not applicable
Molybdic Acid	7782-91-4	Not applicable	Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	CAS-No	CERCLA EHS RQs	Hazardous Substances	SARA 313 - Threshold
-		RQs		Values %
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium Bisulfate Monohydrate	10034-88-5	Not applicable	Not applicable	Not applicable
Sulfuric Acid	7664-93-9	1000 lb	1000 lb	1.0
Molybdic Acid	7782-91-4	Not applicable	Not applicable	Not applicable

# CLP Classification - Regulation (EC) No 1272/2008

Danger.

H335 - May cause respiratory irritation. H314 - Causes severe skin burns and eye damage.

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. 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 CENTER or doctor/ physician.

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## **SECTION 16: OTHER INFORMATION**

Prepared By Regulatory Affairs

Prepared For Thermo Fisher Scientific Inc.©

Issue Date 05-Sep-2019

Revision Date 05-Sep-2019

Reason for revision Initial Release.

# MOEL's Public Notice No. 2016-19 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

#### **Disclaimer**

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**End of Safety Data Sheet**