Product	Hardener Catalyst VM30
Revision Date	24/11/2016
Revision	1

RENISHAW apply innovation™

Safety Data Sheet (SDS)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name	**Hardener Catalyst VM30**
Synonyms, Trade Names	No information available.

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Identified Uses	Curing agent. For Industrial Use Only.
Uses Advised Against	No uses advised against are identified.

1.3 Details of the Supplier of the Safety Data Sheet

Supplier	Renishaw plc Brooms Road Stone Business Park Stone, Staffordshire ST15 0SH United Kingdom Tel: +44 (0) 1785 285000 (during UK office hours 09:00 to 17:00 UTC).
Contact Person	msds@renishaw.com

1.4 Emergency Telephone Number

Emergency Telephone	999 / 911 or local emergency number.

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classifcation of the Substance or Mixture

Classification (EC 1272/2008)	
Physical and Chemical Hazards	Not classified
Human Health	Not classified
Environment	Not classified

2.2 Label Elements

Contains	Not applicable
Label in Accordance With (EC) No. 1272/2008	No pictogram required
Signal Word	No Signal Word
Hazard Statements	No hazard statements required
Precautionary Statements	No precautionary statements required

2.3 Other Hazards

With exposure to acids, bases and oxidizing agents, product will release hydrogen: Extremely flammable. Danger of explosion!

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Not applicable.

3.2 Mixtures

Name	Product Identifier	GHS Classification	%
ORGANOPOLYSILOXANE	CAS-No.: 918-383-6 EC No.:		60-100%

The Full Text for all Hazard Statements Are Displayed in Section 16.

Composition Comments The data shown are in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

General Information Provide general first aid, rest, warmth and fresh air. As a general rule, in case of doubt or if symptoms persist, always call a doctor. Seek medical attention for all burns and eye injuries, regardless how minor they may seem. First aid personnel must be aware of own risk during rescue.

Inhalation If this product is inhaled and symptoms occur, move the exposed person to fresh air promptly. If breathing is difficult, give oxygen. Seek medical attention. Keep person warm and at rest.

Ingestion If this product is ingested, remove victim immediately from source of exposure. Rinse mouth thoroughly. Do not induce vomiting. Provide fresh air, warmth and rest, preferably in comfortable upright sitting position. Get medical attention immediately! Never give anything by mouth to an unconscious person.

Skin Contact Immediately wash with water, preferably under a shower, removing contaminated clothing while washing proceeds. Obtain medical attention if irritation persists or if blistering occurs. Contaminated clothing should be washed before re-use.

Eye Contact Do not rub eye. If this product contacts the eyes, gently flush eyes with water for at least fifteen (15) minutes, lifting the upper and lower eyelids occasionally. Avoid contaminating unaffected eye. Remove contact lenses if present and easy to do so. Seek medical attention.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

General Information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation No specific symptoms noted.

Ingestion No specific symptoms noted.

Skin Contact No specific symptoms noted.

Eye Contact May cause temporary eye irritation.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Notes to the Physician Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Extinguishing Media Extinguish with foam, carbon dioxide or water fog.

Unsuitable Extinguishing Media High volume water jet.

5.2 Special Hazards Arising From the Substance or Mixture

Hazardous Combustion Products Fire may generate irritating, toxic and corrosive gases. Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Silica. Carbon oxides and traces of incompletely burned carbon compounds. Formaldehyde. Hydrogen.

Unusual Fire & Explosion Hazards Some hydrogen gas may be released. Hydrogen is flammable and can form explosive mixtures with air.

Specific Hazards If heated, harmful vapours may be formed. Floors may become slippery, avoid falls. Most fire extinguishing media will cause hydrogen release. Thus, in poorly ventilated or confined spaces, the accumulation of hydrogen may result in flash fire or explosion if ignited. Applying

foam may release flammable hydrogen gas that can be trapped under the foam.

5.3 Advice for Firefighters

Special Fire Fighting Procedures — If possible, fight fire from protected position. Avoid breathing fire vapours. Ventilate closed spaces before entering them. Keep up-wind to avoid fumes. Containers close to fire should be removed immediately or cooled with water if safe to do so.

Protective Equipment for Firefighters — Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions — Do not touch or walk through spilled material. Evacuate and ventilate area. Eliminate all sources of ignition. Wear protective clothing as described in Section 8 of this safety data sheet.
Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation. In case of inadequate ventilation, use respiratory protection. Keep unnecessary and unprotected personnel from entering. On exposure to impurities, product will release hydrogen gas.

For Emergency Responders — Follow safe handling advice and personal protective equipment recommendations for normal use of product.

6.2 Environmental Precautions

Environmental Precautions — Do not discharge onto the ground or into water courses.

6.3 Methods and Material for Containment and Cleaning Up

Spill Clean Up Methods — Stop leak if possible without risk. DO NOT touch spilled material! Wear necessary protective equipment. Ventilate and evacuate the area. Eliminate all sources of ignition. Wear respirator if ventilation is not adequate.
Scrape up with rag or other material and place into suitable clean labelled container. In such a case be aware of generation of hydrogen gas by contaminants. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container Wash work area with water.

6.4 Reference to Other Sections

Reference to Other Sections — See section 1 for emergency contact. For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Handling — Keep away from heat, sparks and open flame. Static electricity and formation of sparks must be prevented. Do not eat, drink or smoke when using the product. Do not use contact lenses. Avoid contact with skin and eyes. Avoid inhalation of vapours. Avoid prolonged or repeated contact. Provide good ventilation.
Wear personal protective equipment. Handle and open container with care. Do not mix with other chemicals. Observe good industrial hygiene practices. Vent container properly to eliminate internal pressure. Do not return product to containers for reuse. On contact with acids, bases and oxidizing agents, product will release hydrogen gas.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage Precautions — Keep away from heat, sparks, direct sunlight and open flames. Store separately from acids, alkalies and oxidising agents. Keep only in a vented container in a well ventilated area. Keep container closed and store away from water or moisture. Do not store in or use glass containers.

Storage Class — Chemical storage.

7.3 Specific End Use(s)

Specific End Use(s)	The identified uses for this product are detailed in Section 1.
Usage Description	Use only according to directions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Ingredient Comments	No exposure limits noted for ingredient(s).

8.2 Exposure Controls

Protective Equipment

Engineering Measures	Provide adequate ventilation, including appropriate local extraction.
Respiratory Equipment	Where risk assessment shows air-purifying respirators are appropriate a full face respirator conforming to EN143, and suitable respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as CEN (EU). Change filters frequently. Use respiratory protection as specified by an industrial hygienist or other qualified professional if concentrations exceed the limits listed in Section 8.
Hand Protection	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374) is recommended. Gloves must be inspected prior to use. Suggested material: Nitrile/Chloroprene. Consult manufacturer for specific advice. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Change gloves regularly. Selection of the glove material depends on consideration of the penetration times, rates of diffusion and degradation, and concentration specific to the workplace.
Eye Protection	Wear safety goggles or face shield to prevent any possibility of eye contact. Use equipment for eye protection tested and approved under appropriate government standards such as EN 166(EU).
Other Protection	Wear appropriate clothing to prevent any possibility of skin contact. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist.
Hygiene Measures	Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke during work. Handle in accordance with good industrial hygiene and safety practice. Keep container tightly closed. Wash promptly if skin becomes wet or contaminated.
Process Conditions	Ensure that eye flushing systems are located close by in the work place.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Appearance	Liquid.
Colour	Colourless.
Odour	Odourless.
Odour Threshold - Lower	No information available.
Odour Threshold - Upper	No information available.
pH-Value, Conc. Solution	No information available.
pH-Value, Diluted Solution	No information available.
Melting Point	No information available.
Initial Boiling Point and Boiling	No information available.

Range	
Flash Point	> 94.00 °C
Evaporation Rate	No information available.
Flammability State	No information available.
Flammability Limit - Lower(%)	No information available.
Flammability Limit - Upper(%)	No information available.
Vapour Pressure	No information available.
Vapour Density (air=1)	Not applicable.
Relative Density	0.98 g/mL at 25 °C.
Bulk Density	No information available.
Solubility	Insoluble.
Decomposition Temperature	No information available.
Partition Coefficient; n-Octanol/Water	No information available.
Auto Ignition Temperature (°C)	No information available.
Viscosity	600 mPas 23.00
Explosive Properties	Not classified as explosive. Some hydrogen gas may be released. Hydrogen is flammable and can form explosive mixtures with air.
Oxidising Properties	No information available.

9.2 Other Information

Molecular Weight	No information available.
Volatile Organic Compound	No information available.
Other Information	None noted.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Reactivity	Hydrogen is liberated on contact with water, alcohols, acidic or basic materials, many metals or metallic compounds and can form explosive mixtures in air. Product will release hydrogen gas on contact with acids, bases and oxidizing agents.

10.2 Chemical Stability

Stability	Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous Reactions	Avoid contact with acidic, basic or oxidizing materials.
Hazardous Polymerisation	May polymerise.
Polymerisation Description	Unknown.

10.4 Conditions to Avoid

Conditions to Avoid	Heat, sparks, open flames, temperature extremes and direct sunlight.

10.5 Incompatible Materials

Materials to Avoid	Store separately from acids, alkalies, and oxidising agents. Avoid contact with metals and water. Strong reducing agents, Alcohols. Metallic compounds.

10.6 Hazardous Decomposition Products

Hazardous Decomposition Products	Thermal decomposition or combustion may liberate carbon oxides and other harmful gases or vapors. Decomposition may lead to the release of flammable hydrogen gas. Silica. Carbon oxides and traces of incompletely burned carbon compounds. Formaldehyde. Hydrogen.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Toxicological Information	No toxicological information for the overall finished product.
Acute Toxicity (Oral LD50)	No information available.
Acute Toxicity (Dermal LD50)	No information available.
Acute Toxicity (Inhalation LD50)	No information available.
Serious Eye Damage/Irritation	May cause temporary eye irritation.
Skin Corrosion/Irritation	No information available.
Respiratory Sensitisation	No information available.
Skin Sensitisation	No information available.
Germ Cell Mutagenicity	No information available.
Carcinogenicity	No information available.
Specific Target Organ Toxicity - Single Exposure:	
STOT - Single Exposure	No information available.
Specific Target Organ Toxicity - Repeated Exposure:	
STOT - Repeated Exposure	No information available.
Inhalation	No specific symptoms noted.
Ingestion	No specific symptoms noted.
Skin Contact	No specific symptoms noted.
Eye Contact	May cause temporary eye irritation.
Waste Management	When handling waste, consideration should be made to the safety precautions applying to handling of the product.
Routes of Entry	No information available.
Target Organs	No target organs specified.
Aspiration Hazards:	No information available.
Reproductive Toxicity:	No information available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Acute Toxicity - Fish	No information available.
Acute Toxicity - Aquatic Invertebrates	No information available.
Acute Toxicity - Aquatic Plants	No information available.
Acute Toxicity - Microorganisms	No information available.
Chronic Toxicity - Fish	No information available.
Chronic Toxicity - Aquatic Invertebrates	No information available.
Chronic Toxicity - Aquatic Plants	No information available.
Chronic Toxicity - Microorganisms	No information available.
Ecotoxicity	No Ecological information on the finished product.
Eco Toxilogical Information	No ecological toxicity available on the overall finished product.

12.2 Persistence and Degradability

Degradability	No information available.
Biological Oxygen Demand	No information available.
Chemical Oxygen Demand	No information available.

12.3 Bioaccumulative Potential

Bioaccumulative Potential	No data available on bioaccumulation.
Bioacculmation Factor	No information available.
Partition Coefficient; n-Octanol/Water	No information available.

12.4 Mobility in Soil

Mobility	No information available.

12.5 Results of PBT and vPvB Assessment

Results of PBT and vPvB Assessment	No information available.

12.6 Other Adverse Effects

Other Adverse Effects	No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Management	When handling waste, consideration should be made to the safety precautions applying to handling of the product.

13.1 Waste Treatment Methods

Disposal Methods	Dispose of waste and residues in accordance with local authority requirements, and in accordance with all local, national and international regulations. For waste disposal, use a licensed industrial waste disposal agent.

SECTION 14: TRANSPORT INFORMATION

14.1 UN Number

UN No. (ADR)	Not applicable.
UN No. (IMDG)	Not applicable.
UN No. (IATA)	Not applicable.

14.2 UN Proper Shipping Name

ADR Proper Shipping Name	Not applicable.
IMDG Proper Shipping Name	Not applicable.
IATA Proper Shipping Name	Not applicable.

14.3 Transport Hazard Class(es)

ADR Class	Not applicable.
IMDG Class	Not applicable.
IATA Class	Not applicable.
Transport Labels	Not applicable

14.4 Packing Group

ADR/RID/ADN Packing Group	Not applicable.
IMDG Packing Group	Not applicable.
IATA Packing Group	Not applicable.

14.5 Environmental Hazards

ADR	No
IMDG	No
IATA	No

14.6 Special Precautions for User

EMS	Not applicable.
Emergency Action Code	Not applicable.
Hazard No. (ADR)	Not applicable.
Tunnel Restriction Code	Not applicable.

14.7 Transport in Bulk According to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

EU Legislation	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments. The UN Globally Harmonized System (GHS) Safety Data Sheet format (Annex IV) is implemented as Annex II of REACH EU No 453/2010 of 20th May 2010 amending regulation (EC) No 1907/2006.
Approved Code of Practice	Workplace Exposure Limits Guidance Note EH40/2005.
Chemical Safety Assessment	No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

General Information	This Safety Data Sheet is in accordance with Reach Regulation (EC) No 453/2010.
Revision Comments	This is a first issue.
Revision Date	24/11/2016
Revision	1
Safety Data Sheet Status	Approved.

Hazard Statements In Full

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.