

Product 3176A  
 Revision Date 12/10/2016  
 Revision 1



## Safety Data Sheet (SDS)

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

#### 1.1 Product Identifier

**Product Name** 3176A  
**Synonyms, Trade Names** No information available.

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

**Identified Uses** Vacuum casting.  
**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).  
 msds@renishaw.com

**Contact Person**

#### 1.4 Emergency Telephone Number

**Emergency Telephone** 999 / 911 or local emergency number.

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 Classification 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

This product is not classified as hazardous. The information in this datasheet is given for guidance only.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substance

Not applicable.

### 3.2 Mixtures

Name	Product Identifier	GHS Classification	%
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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. Never give anything by mouth to an unconscious person. Seek medical advice (show the label where possible).

**Skin Contact**

Wash exposed area with soap and water. Get medical attention if irritation develops or persists. 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**

There may be irritation of the throat.

**Skin Contact**

There may be mild irritation at the site of contact.

**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**

Use fire-extinguishing media appropriate for surrounding materials: Powder dry chemicals, carbon dioxide, foam spray.

**Unsuitable Extinguishing Media**

High volume water jet.

### 5.2 Special Hazards Arising From the Substance or Mixture

**Hazardous Combustion Products**

During fire, toxic gases (CO, CO<sub>2</sub>) are formed.

**Unusual Fire & Explosion Hazards**

No unusual fire or explosion hazards noted.

**Specific Hazards**

If heated, harmful vapours may be formed. Floors may become slippery, avoid falls.

### 5.3 Advice for Firefighters

**Special Fire Fighting Procedures**

If possible, fight fire from protected position. Use powder, dry chemical, carbon dioxide etc. for initial stage of fire. For a large scale fire, use foam to smother flames. 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.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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**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. Use non-sparking hand tools and explosion proof electrical equipment. Wear protective clothing as described in Section 8 of this safety data sheet.

**For Emergency Responders**

Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation. In case of inadequate ventilation, use respiratory protection. Do not smoke, eat or drink while using this product. Keep unnecessary and unprotected personnel from entering. Follow safe handling advice and personal protective equipment recommendations for normal use of product.

**6.2 Environmental Precautions****Environmental Precautions**

Do not allow ANY environmental contamination. 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. Use non sparking tools or equipment for clean up. Absorb spillage with non-combustible, absorbent material - sand. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container. In case of a large scale of spill, dyke area with sand to stop the spill spreading. 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.

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**SECTION 7: HANDLING AND STORAGE**

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**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.

**7.2 Conditions for Safe Storage, Including Any Incompatibilities****Storage Precautions**

Close container tightly and store in dry, cool and dark place away from direct sunlight. Prohibit ignition sources close to storage area. Do not expose to temperatures exceeding 50 C.

**Storage Class**

Chemical storage. Store separately from acids, alkalies, oxidising agents and water.

**7.3 Specific End Use(s)****Specific End Use(s)  
Usage Description**

The identified uses for this product are detailed in Section 1.  
Use only according to directions.

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

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**8.1 Control Parameters****Ingredient Comments**

No exposure limits noted for ingredient(s).

**8.2 Exposure Controls****Protective Equipment**



#### Engineering Measures Respiratory Equipment

Provide adequate ventilation, including appropriate local extraction.  
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. Type A/organic vapour protective components recommended.

#### 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. Layer thickness:  $\geq 0.35$  mm.

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. The selected clothing must satisfy the European norm standard EN 943.

#### 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	Barely Perceptible Odour.
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 Range	$>35$ degrees C.
Flash Point	$> 93.00$ °C
Evaporation Rate	Negligible.
Flammability State	No information available.
Flammability Limit - Lower(%)	No information available.
Flammability Limit - Upper(%)	No information available.
Vapour Pressure	No information available.

<b>Vapour Density (air=1)</b>	No information available.
<b>Relative Density</b>	1.1g/cm <sup>3</sup> @ 20.00 °C
<b>Bulk Density</b>	No information available.
<b>Solubility</b>	No information available.
<b>Decomposition Temperature</b>	No information available.
<b>Partition Coefficient; n-Octanol/Water</b>	No information available.
<b>Auto Ignition Temperature (°C)</b>	No information available.
<b>Viscosity</b>	Non-viscous.
<b>Explosive Properties</b>	Not classified as explosive.
<b>Oxidising Properties</b>	Non-oxidising.

**9.2 Other Information**

<b>Molecular Weight</b>	No information available.
<b>Volatile Organic Compound</b>	No information available.
<b>Other Information</b>	None noted.

**SECTION 10: STABILITY AND REACTIVITY****10.1 Reactivity**

<b>Reactivity</b>	Stable under recommended transport and storage conditions and under recommended use.
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**10.2 Chemical Stability**

<b>Stability</b>	Stable under normal temperature conditions and recommended use.
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**10.3 Possibility of Hazardous Reactions**

<b>Hazardous Reactions</b>	For information on hazardous reaction see section 10.1.
<b>Hazardous Polymerisation</b>	No information available.
<b>Polymerisation Description</b>	Unknown.

**10.4 Conditions to Avoid**

<b>Conditions to Avoid</b>	Temperatures above 50 degrees Celsius. Heat, sparks, open flames, temperature extremes and direct sunlight.
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**10.5 Incompatible Materials**

<b>Materials to Avoid</b>	Store separately from acids, alkalies, and oxidising agents.
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**10.6 Hazardous Decomposition Products**

<b>Hazardous Decomposition Products</b>	Thermal decomposition or combustion may liberate carbon oxides and other harmful gases or vapors.
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**SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on Toxicological Effects**

<b>Toxicological Information</b>	No toxicological information for the overall finished product.
<b>Acute Toxicity (Oral LD50)</b>	No information available.
<b>Acute Toxicity (Dermal LD50)</b>	No information available.

<b>Acute Toxicity (Inhalation LD50)</b>	No information available.
<b>Serious Eye Damage/Irritation</b>	May cause temporary eye irritation.
<b>Skin Corrosion/Irritation</b>	No information available.
<b>Respiratory Sensitisation</b>	No information available.
<b>Skin Sensitisation</b>	No information available.
<b>Germ Cell Mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Specific Target Organ Toxicity - Single Exposure:</b>	
<b>STOT - Single Exposure</b>	No information available.
<b>Specific Target Organ Toxicity - Repeated Exposure:</b>	
<b>STOT - Repeated Exposure</b>	No information available.
<b>Inhalation</b>	No specific symptoms noted.
<b>Ingestion</b>	There may be irritation of the throat.
<b>Skin Contact</b>	There may be mild irritation at the site of contact.
<b>Eye Contact</b>	May cause temporary eye irritation.
<b>Waste Management</b>	When handling waste, consideration should be made to the safety precautions applying to handling of the product.
<b>Routes of Entry</b>	No information available.
<b>Target Organs</b>	No target organs specified.
<b>Aspiration Hazards:</b>	No information available.
<b>Reproductive Toxicity:</b>	No information available.

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## SECTION 12: ECOLOGICAL INFORMATION

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### 12.1 Toxicity

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

### 12.2 Persistence and Degradability

<b>Degradability</b>	The product is biodegradable.
<b>Biological Oxygen Demand</b>	No information available.
<b>Chemical Oxygen Demand</b>	No information available.

### 12.3 Bioaccumulative Potential

<b>Bioaccumulative Potential</b>	No Bio-accumulation potential.
<b>Bioaccumulation Factor</b>	No information available.
<b>Partition Coefficient; n-Octanol/Water</b>	No information available.

### 12.4 Mobility in Soil

<b>Mobility</b>	Readily absorbed into soil.
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**12.5 Results of PBT and vPvB Assessment**

**Results of PBT and vPvB Assessment** This product is not identified as a PBT/vPvB substance.

**12.6 Other Adverse Effects**

**Other Adverse Effects** Negligible ecotoxicity.

**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.

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**SECTION 16: OTHER INFORMATION**

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**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**

12/10/2016

**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.