

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

Product Identifier

Product Name: Component for Polyurethane mold rubber
 Synonyms: n/a
 Trade Names: Liquacast Part A

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

Main Applications (non exhaustive list): Component for Polyurethane mold rubber.
 For industrial / professional use only.

Details of the supplier of the Safety Data Sheet

Company Name: Castaldo
 A division of: Goodwin Refractory Services Ltd.
 Address: Spencroft Road, Holditch Industrial Estate Newcastle under Lyme, Staffordshire, ST5 9JE, UK
 Phone No. +44 (0)1782 663600
 Fax No. +44 (0)1782 663611
 Email address: info@grscastingpowders.com

Emergency telephone number:

Emergency Telephone No. +44 (0)1782 663600
 Available outside office hours? No

2. HAZARDS IDENTIFICATION

Classification:

Acute Inhalation Toxicity: Category 4
 Skin Irritation: Category 2
 Eye Irritation: Category 2
 Respiratory Sensitization: Category 1
 Skin Sensitization: Category 1
 Carcinogenicity: Category 2
 Reproductive Toxicity: Category 1B
 Specific Target Organ Toxicity Single Exposure: Category 3 (Respiratory Irritation)
 Specific Target Organ Toxicity Repeated Exposure: Category 2 (Lungs & Respiratory System)

Aquatic Toxicity (Acute): Category 1
 Aquatic Toxicity (Chronic): Category 1

Label elements:



Signal word: Danger

Hazard statements:

H315: Causes skin irritation.
 H317: May cause an allergic skin reaction.
 H319: Causes serious eye irritation.
 H332: Harmful if inhaled.
 H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335: May cause respiratory irritation.
 H351: Suspected of causing cancer.
 H360: May damage fertility or the unborn child.
 H373: May cause damage to organs (lungs or respiratory system) through prolonged or repeated exposure.
 H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P201: Obtain special instructions before use.
 P202: Do not handle until all safety precautions have been read and understood.
 P260: Do not breathe vapours, aerosols or mists.
 P273: Avoid release to the environment.
 P280: Wear protective gloves, protective clothing, eye protection and face protection.
 P284: In case of inadequate ventilation, wear respiratory protection.
 P405: Store locked up.
 P501: Dispose of contents and container in accordance with local regulations.

Supplemental Information:

Individuals sensitized to isocyanates should discontinue use. Long-term over-exposure to isocyanates may cause lung damage. This is one part of a two-part system. Read and understand the hazard information on part B before using.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixture

	CAS #	%
Polymeric methylenediphenyl Diisocyanate (MDI)	9016-87-9	35
Butyl benzyl phthalate (BBP)	85-68-7	65

4. FIRST AID MEASURES

Description of first aid measures:

Eye Contact:	Rinse thoroughly with plenty of water for at least 15 minutes, holding eye lids open to be sure the material is washed out. Get prompt medical attention.
Inhalation:	Move exposed person to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
Ingestion:	Do not induce vomiting unless directed to do so by medical personnel. Get medical attention.
Skin Contact:	Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation or symptoms of exposure develop. Launder clothing before reuse. Discard items that cannot be decontaminated.

Most important symptoms/ effects: Causes skin and eye irritation. Vapors or mists may cause respiratory irritation. May cause allergic skin and / or respiratory reaction in sensitized persons. Symptoms may include skin rash, wheezing, shortness of breath and other asthma symptoms.

Indication of any immediate medical attention and special treatment

needed: Immediate medical attention is required for asthmatic symptoms or serious inhalation exposures. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Persons sensitized to Diisocyanate should consult a physician before working with respiratory irritants or sensitizers.

5. FIRE FIGHTING MEASURES

Extinguishing media: Use water fog, foam, carbon dioxide or dry chemical. Do not use solid water stream. Solid stream of water into hot product may cause violent steam generation or eruption.

Special hazards arising from the substance or mixture: Not classified as flammable or combustible. Product will burn under fire conditions.

Advice for firefighters: Wear positive pressure, self-contained breathing apparatus and full-body protective clothing. Cool fire-exposed containers with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective and emergency procedures: Remove all ignition sources. Clear non-emergency personnel from the area. Ventilate area. Wear appropriate protective clothing to prevent eye and skin contact and respiratory protection.

Methods and material for containment and cleaning up:

Cover with an inert absorbent material and collect into an appropriate container for disposal. Do not seal the container since CO₂ is generated on contact with moisture and dangerous pressure buildup can occur. Decontaminate floor area with a mixture of water plus isopropyl alcohol (10–20%), household ammonia (10%), and detergent (2%).

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid breathing vapors or mists. Use with adequate ventilation. Avoid contact with the eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep container closed when not in use.

Precautions for safe storage:

Store indoors at temperatures between 55 F and 95 F (13 C and 35 C). Store in original, unopened containers. Protect from atmospheric moisture and water since TDI reacts with water to form CO₂ leading to potentially dangerous pressure build up in sealed containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure limits:

Chemical name	Exposure limits
Methylenediphenyl Diisocyanate	0.02 ppm (c) OSHA PEL
	0.005 ppm TWA ACGIH TLV
	0.02 mg/m ³ TWA UK EH40
Butyl benzyl phthalate	5 mg/m ³ TWA UK EH40

Ventilation: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

Respiratory protection: If needed (i.e., ventilation is inadequate), use a NIOSH– approved air– purifying, tight- fitting, half– face respirator with organic vapor cartridges. Respirator selection and use should be based on containment type, form and concentration. For higher exposures or in an emergency, use a supplied– air respirator. Use respirators in accordance with OSHA’s respiratory protection standard (29 CFR 1910.134) or EU equivalent.

Skin protection: Wear impervious gloves, such as butyl rubber or nitrile rubber.

Eye protection: Wear chemical safety goggles / glasses.

Other protective measures: Wear impervious clothing to prevent skin contact and contamination of personal clothing. An eye wash and washing facility should be available in the work area. Follow good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Brown liquid
Odor:	Musty
Odor threshold:	0.4 ppm (MDI)
pH	Not applicable
Melting point/ freezing point:	No data available
Initial Boiling point:	No data available
Flash point:	>399F (204C) (estimated)
Evaporation rate:	No data available
Flammability:	No data available
Upper/ lower flammability exposure limit:	No data available
Vapour pressure:	≤ 0.01 mm Hg @ 25C (estimated)
Relative density:	1.1 @ 25C
Water solubility:	Insoluble in water
Partition coefficient:	Reacts with water
Auto ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	60—100 cP @ 25C
Explosive Properties:	No data available
Oxidising properties:	No data available

10. STABILITY AND REACTIVITY

Reactivity: Diisocyanate react with many materials and the rate of reaction increases with temperature. Reaction with water generates carbon dioxide and heat.

Chemical stability: Stable under recommended conditions.

Possibility of hazardous reactions: Elevated temperatures can cause hazardous polymerization. Polymerization can be catalyzed by strong bases of water. Reaction with water generates carbon dioxide, and results in heat and pressure buildup in closed systems.

Conditions to avoid: Avoid moisture and temperatures below 60 F (13 C) and above 95 F (35 C) to protect product integrity.

Incompatible materials: Avoid contact with water, acids, bases, alcohols, strong oxidizers, and some metals (e.g., aluminum, zinc, brass, tin, copper).

Hazardous decomposition products: Possibly isocyanate vapor, carbon monoxide, nitrogen oxides, and traces of hydrogen cyanide.

11. TOXICOLOGY INFORMATION

Information on toxicology effects:

Acute toxicity values: For TDI: Oral rat LD50 >2,000 mg/kg; skin rabbit LD50 >9,400 mg/kg; inhalation rat LC50 0.48 mg/L/1 hr (aerosol) (equivalent 0.24 mg/L/4 hr). Calculated ATE-mix LC50 12.0 mg/L/4 hr.

Germ Cell Mutagenicity: Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some vitro studies; other in vitro studies were negative.

Carcinogenicity: Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI. Tumors occurred concurrently with respiratory irritation and lung injury.

Reproductive toxicity: In laboratory animals, MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Specific Target Organ Toxicity:

Single Exposure: May cause respiratory irritation

Repeated exposure: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposure to MDI.

12. ECOLOGICAL INFORMATION

Eco toxicity: Diisocyanate ingredient is not classified as dangerous to the environment. Based on Butyl benzyl phthalate, product is considered as dangerous to aquatic environment.
Persistence and Degradability: No data available
Bioaccumulative Potential: No data available
Mobility in soil: No data available

13. DISPOSAL CONSIDERATIONS

Dispose according to local, state and federal regulations. In the U.S, this product is not a RCRA hazardous waste (per 40 CFR 261).

14. TRANSPORT INFORMATION

US DOT By Ground: Packages of 5-gal and smaller are not regulated as hazardous materials for ground transport. For 55- gal drums; RQ, UN 3082, Environmentally hazardous substance, liquid n.o.s (BBP), 9, III)

By vessel or IMDG: UN 3082 Environmentally hazardous substance, liquid n.o.s (BBP), 9, III)

IATA: UN 3082 Environmentally hazardous substance, liquid n.o.s (BBP), 9, III)

15. REGULATORY INFORMATION

CERCLA 103 Reportable quantity: The RQ for BBP is 100 lb. 55- gal of Liquacast Part A contains >100 lb BBP.

SARA Title III:

Section 311/312: Acute health, Chronic health

Section 313 Toxic chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Diisocyanates category 35%

EPA Toxic substances control act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

State Regulations:

California Proposition 65: WARNING: This product can expose you to chemicals including BBP, which is known to the state of California to cause reproductive harm.

16. OTHER INFORMATION

Training advice: Train personnel using this product in proper chemical handling, engineering controls and protective equipment.

Recommended uses and restrictions: This product is intended for industrial / professional use only.

Revision History:

09/07/2020– Rev 1 (New document)

Disclaimer:

Such information given on this safety data sheet is to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as its accuracy, reliability or completeness. It is the users responsibility to satisfy itself as to the suitability and completeness of such information for their own particular use.

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

Product Identifier

Product Name: Component for Polyurethane mold rubber
Synonyms: n/a
Trade Names: Liquacast Part B

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

Main Applications (non exhaustive list): Component for Polyurethane mold rubber.
For industrial / professional use only.

Details of the supplier of the Safety Data Sheet

Company Name: Castaldo
A division of: Goodwin Refractory Services Ltd.
Address: Spencroft Road, Holditch Industrial Estate
Newcastle under Lyme, Staffordshire, ST5 9JE, UK
Phone No. +44 (0)1782 663600
Fax No. +44 (0)1782 663611
Email address: info@grscastingpowders.com

Emergency telephone number:

Emergency Telephone No. +44 (0)1782 663600
Available outside office hours? No

2. HAZARDS IDENTIFICATION

Classification:

Reproductive Toxicity: Category 1B
Specific Target Organ Toxicity Repeated Exposure: Category 2
Aquatic Toxicity Acute: Category 1
Aquatic Toxicity Chronic: Category 2

Label elements:



Signal word: Danger

Hazard statements:

H360: May damage fertility or the unborn child.
H373: May cause damage to organs (lungs or respiratory system) through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe vapours, aerosols or mists.
P273: Avoid release to the environment.
P280: Wear protective gloves, protective clothing, eye protection and face protection.
P405: Store locked up.
P501: Dispose of contents and container in accordance with local regulations.

Supplemental Information:

May cause eye and skin irritation. Read and understand the hazard information on part A before using.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixture

	CAS #	%
Butyl benzyl phthalate (BBP)	85-68-7	30-99
Phenylmercury compound	Unknown	≤0.4

4. FIRST AID MEASURES

Description of first aid measures:

Eye Contact:	Rinse thoroughly with plenty of water for at least 15 minutes, holding eye lids open to be sure the material is washed out. Get prompt medical attention.
Inhalation:	Move exposed person to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
Ingestion:	Do not induce vomiting unless directed to do so by medical personnel. Get medical attention.
Skin Contact:	Remove contaminated clothing. Wash contact area thoroughly with soap and water. Get medical attention if irritation or symptoms of exposure develop. Launder clothing before reuse. Discard items that cannot be decontaminated.

Most important symptoms/ effects: May cause damage to nervous system through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment

needed: Immediate medical attention is not required.

5. FIRE FIGHTING MEASURES

Extinguishing media: Use water fog, foam, carbon dioxide or dry chemical. Do not use solid water stream. Solid stream of water into hot product may cause violent steam generation or eruption.

Special hazards arising from the substance or mixture: Not classified as flammable or combustible. Product will burn under fire conditions.

Advice for firefighters: Wear positive pressure, self-contained breathing apparatus and full-body protective clothing. Cool fire-exposed containers with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective and emergency procedures: Remove all ignition sources. Clear non-emergency personnel from the area. Wear appropriate protective clothing to prevent eye and skin contact and avoid breathing vapours. Caution- spill area may be slippery.

Methods and material for containment and cleaning up:

Cover with an inert absorbent material and collect into an appropriate container for disposal. Avoid release to the environment. Report spills and releases as required to appropriate authorities.

7. HANDLING AND STORAGE

Precautions for safe handling:

Use with adequate ventilation. Avoid contact with the eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep container closed when not in use.

Precautions for safe storage:

Store indoors at temperatures below 120F. Store in original containers. Avoid getting moisture into containers. Keep containers tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure limits:

Chemical name	Exposure limits
Butyl benzyl phthalate	5 mg/m3 TWA UK EH40
Aryl mercury compound (as Hg)	0.1 mg/m3 (Ceiling) OSHA PEL
	0.1 mg/m3 TWA ACGIH TLV

Ventilation: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

Respiratory protection: If needed (i.e., ventilation is inadequate), use a NIOSH– approved air– purifying, tight– fitting, half– face respirator with organic vapor cartridges. Respirator selection and use should be based on containment type, form and concentration. For higher exposures or in an emergency, use a supplied– air respirator.

Skin protection: Wear impervious gloves, such as butyl rubber or nitrile rubber.

Eye protection: Wear chemical safety goggles / glasses.

Other protective measures: An eye wash facility and washing facility should be available in the work area. Avoid skin contact. Follow good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White opaque liquid
Odor:	Mild
Odor threshold:	No data available
pH	Not applicable
Melting point/ freezing point:	No data available
Initial Boiling point:	No data available
Flash point:	>128C (262F)
Evaporation rate:	No data available
Flammability:	No data available
Upper/ lower flammability exposure limit:	No data available
Vapour pressure:	<1mm Hg @ 25C
Relative density:	1.4 @ 25C
Water solubility:	Insoluble in water
Partition coefficient:	No data available
Auto ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	80,000 cP
Explosive Properties:	No data available
Oxidising properties:	No data available

10. STABILITY AND REACTIVITY

Reactivity: Not normally reactive.

Chemical stability: Stable under recommended conditions.

Possibility of hazardous reactions: Reaction with strong oxidizers generates heat.

Conditions to avoid: Avoid excessive heat.

Incompatible materials: Avoid contact with strong oxidizers.

Hazardous decomposition products: Thermal decomposition will generate oxides of carbon and mercury compounds.

11. TOXICOLOGY INFORMATION

Information on toxicology effects:

Acute toxicity values: Phenylmercury compound: Oral rat LD50 is 50-300 mg/kg.

Germ Cell Mutagenicity: Components are not known mutagens. Butyl benzyl phthalate was negative in bacterial assay for mutagenicity.

Carcinogenicity: Components are not designated as carcinogens by NTP, IARC, or OSHA.

Reproductive toxicity: Butyl benzyl phthalate has been found to adversely affect reproductive organs and fetal development in experimental animal studies. Based on laboratory studies, BBP is presumed to be a human reproductive toxicant.

Specific Target Organ Toxicity:

Single Exposure: No data available.

Repeated exposure: Contains an inorganic mercury compound which may cause damage to the central nervous system and kidneys.

12. ECOLOGICAL INFORMATION

Eco toxicity: Based on concentration of Butyl benzyl phthalate and mercury compound, product is considered dangerous to aquatic life.

Persistence and Degradability: Not readily biodegradable.

Bioaccumulative Potential: No data available.

Mobility in soil: No data available.

13. DISPOSAL CONSIDERATIONS

Dispose according to local, state and federal regulations. In the U.S, upon disposal, this product (Uncured), are characteristic of RCRA hazardous waste (D009– owing to mercury content) as defined in 40 CFR 261. Cured materials may be RCRA– regulated owing to mercury content.

14. TRANSPORT INFORMATION

US DOT By Ground: Packages of 5-gal and smaller are not regulated as hazardous materials for ground transport. For 55– gal drums; RQ, UN 3082, Environmentally hazardous substance, liquid n.o.s (BBP), 9, III)

By vessel or IMDG: UN 3082 Environmentally hazardous substance, liquid n.o.s (BBP), 9, III)

IATA: UN 3082 Environmentally hazardous substance, liquid n.o.s (BBP), 9, III)

15. REGULATORY INFORMATION

CERCLA 103 Reportable quantity: The RQ for BBP is 100 lb. 55- gal of Liquacast Part B contains >100 lb BBP.

SARA Title III:

Section 311/312: Acute health, Chronic health

Section 313 Toxic chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Mercury compound: N458 ≤0.4%

EPA Toxic substances control act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

State Regulations:

California Proposition 65: WARNING: This product can expose you to chemicals including BBP and Phenylmercuric compounds, which are known to the state of California to cause reproductive harm.

16. OTHER INFORMATION

Training advice: Train personnel using this product in proper chemical handling, engineering controls and protective equipment.

Recommended uses and restrictions: This product is intended for industrial / professional use only.

Revision History:

09/07/2020– Rev 1 (New document)

Disclaimer:

Such information given on this safety data sheet is to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as its accuracy, reliability or completeness. It is the users responsibility to satisfy itself as to the suitability and completeness of such information for their own particular use.