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MATERIAL SAFETY DATA SHEET
BC 883 LLM LIQUID LINE MARKER – FAST CURE

SUPPLIER:
BRADECHEM LIMITED
UNIT 1 THE BUSINESS VENUE,
GRANDHOLM,
ABERDEEMN,
AB22 8AA, UNITED KINGDOM
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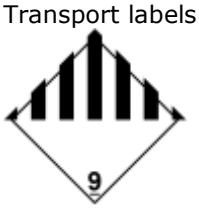
THIS PRODUCT IS A KIT AND SUPPLIED AS A MULTI PART PRODUCT WHICH CONSISTS OF A BASE COMPONENT AND ACTIVATOR COMPONENT. THIS DOCUMENT CONTAINS THE MSDS FOR BOTH BASE AND ACTIVATOR COMPONENTS.

TRANSPORTATION INFORMATION

ACTIVATOR	BASE
UN number UN No. (ADR/RID) 3082 UN No. (IMDG) 3082 UN No. (ICAO) 3082 UN No. (ADN) 3082 UN proper shipping name Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS ALIPHATIC POLYISOCYANATE, HEXAMETHYLENE DIISOCYANATE OLIGOMERS) Proper shipping name (IMDG)	General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID). UN number Not applicable. UN proper shipping name Not applicable. Transport hazard class(es) No transport warning sign required. Packing group Not applicable Environmental hazards Environmentally hazardous substance/marine pollutant

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS ALIPHATIC POLYISOCYANATE, HEXAMETHYLENE DIISOCYANATE OLIGOMERS) Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS ALIPHATIC POLYISOCYANATE, HEXAMETHYLENE DIISOCYANATE OLIGOMERS) Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS ALIPHATIC POLYISOCYANATE, HEXAMETHYLENE DIISOCYANATE OLIGOMERS) Transport hazard class(es) ADR/RID class 9 ADR/RID classification code M6 ADR/RID label 9 IMDG class 9 ICAO class/division 9 ADN class 9 Transport labels  Packing group ADR/RID packing group III IMDG packing group III ADN packing group III ICAO packing group III Environmental hazards Environmentally hazardous substance/marine pollutant  Special precautions for user Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. EmS F-A, S-F ADR transport category 3 Emergency Action Code •3Z Hazard Identification Number (ADR/RID) 90 Tunnel restriction code (E)	No. Special precautions for user Not applicable. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	

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SECTION 1: Identification of Substance/ Preparation and Company

1.1 Product identifier

BC 883 LLM Liquid Line Marker – Fast Cure – ACTVATOR

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

1.3 Details of the supplier of the safety data sheet

Bradechem LTD
Unit 1 The Business Venue
Grandholm, Aberdeen
AB22 8AA
Tel: +44 (0) 1224 822 227
Email: sales@bradechem.com

1.4 Emergency telephone number

+44 (0) 1224 822 227 (9am to 5pm)

Section 2: Hazards identification

2.1. Classification of the substance or mixture
Classification
Physical hazards Not Classified
Health hazards Acute Tox. 4 - H332 Skin Sens. 1 - H317 STOT SE 3 - H335
Environmental hazards Aquatic Chronic 2 - H411
2.2. Label elements
Pictogram

Signal word Warning
Hazard statements H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements P261 Avoid breathing vapour/spray.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P321 Specific treatment (see medical advice on this label).
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with national regulations.
Contains HEXAMETHYLENE DIISOCYANATE OLIGOMERS, ALIPHATIC POLYISOCYANATE, HEXAMETHYLENE-DI-ISOCYANATE
2.3. Other hazards
This product does not contain any substances classified as PBT or vPvB.

Section 3: Composition/information on ingredients

3.2. Mixtures
Hazardous ingredients:

HEXAMETHYLENE DIISOCYANATE OLIGOMERS				
CAS number: 28182-81-2	EC number: 500-060-2	Classification Skin Sens. 1 - H317 Acute Tox. 4 - H332 STOT SE 3 - H335 STOT SE 3 - H335	Classification (67/548/EEC or 1999/45/EC) Xi; R43	Percent – 60 -100 %

ALIPHATIC POLYISOCYANATE

CAS number: —	Classification Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	Classification (67/548/EEC or 1999/45/EC) N;R51/53. R43.		Percent 10-30%

HEXAMETHYLENE-DI-ISOCYANATE

CAS number: 822-06-0	EC number: 212-485-8	Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319	Classification (67/548/EEC or 1999/45/EC)	<1 %

		Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Acute Tox. 4 - H302 Acute Tox. 3 - H331 STOT SE 3 - H335 STOT SE 3 - H335	T;R23 R42/43 Xi;R36/37/38	

Section 4: First aid measures

4.1. Description of first aid measures
General information Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
Inhalation Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Skin contact It is important to remove the substance from the skin immediately. In the event of any sensitisation symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.
Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue. If it is
suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.
4.2. Most important symptoms and effects, both acute and delayed
General information See Section 11 for additional information on health hazards. The severity of the symptoms
described will vary dependent on the concentration and the length of exposure.
Inhalation A single exposure may cause the following adverse effects: Headache. Exhaustion and weakness.
Ingestion May cause sensitisation or allergic reactions in sensitive individuals. Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact

may cause dryness of the skin.
Eye contact May cause temporary eye irritation.
4.3. Indication of any immediate medical attention and special treatment needed
Notes for the doctor Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.

Section 5: Fire-fighting measures

5.1. Extinguishing media
Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry
powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing
media
Do not use water jet as an extinguisher, as this will spread the fire.
5.2. Special hazards arising from the substance or mixture
Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up.
This product is toxic.
Hazardous combustion
products
Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.
5.3. Advice for firefighters
Protective actions during
firefighting
Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment
for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) 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 No action shall be taken without appropriate training or involving any personal risk. Keep
unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid inhalation of dust and vapours. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.
6.2. Environmental precautions
Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the

aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution
occurs (sewers, waterways, soil or air).
6.3. Methods and material for containment and cleaning up
Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills
immediately and dispose of waste safely. Provide adequate ventilation. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
6.4. Reference to other sections
Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health
hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

Section 7: Handling and storage

7.1. Precautions for safe handling
Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in
Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.
Advice on general
occupational hygiene
Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.
7.2. Conditions for safe storage, including any incompatibilities
Storage precautions Store in accordance with local regulations. Keep only in the original container. Keep container
tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.
Storage class Toxic storage.
7.3. Specific end use(s)
Specific end use(s) The identified uses for this product are detailed in Section 1.2..

Section 8: Exposure controls/personal protection

8.1. Control parameters
Occupational exposure limits

HEXAMETHYLENE DIISOCYANATE OLIGOMERS
Long-term exposure limit (8-hour TWA): OEL 0.02 mg/m³
Short-term exposure limit (15-minute): OEL 0.07 mg/m³
as NCO
HEXAMETHYLENE-DI-ISOCYANATE
Long-term exposure limit (8-hour TWA): OEL 0.02 mg/m³
Short-term exposure limit (15-minute): OEL 0.07 mg/m³
as NCO
Sen
OEL = Occupational Exposure Limit.
Sen = Capable of causing occupational asthma.

8.2. Exposure controls

Protective equipment

Appropriate engineering controls

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure

controls
Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Appearance Liquid.
9.2. Other information
Other information No information required..

Section 10: Stability and reactivity

10.1. Reactivity
Reactivity There are no known reactivity hazards associated with this product.
10.2. Chemical stability
Stability Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
10.3. Possibility of hazardous reactions
Possibility of hazardous
reactions
No potentially hazardous reactions known.
10.4. Conditions to avoid
Conditions to avoid There are no known conditions that are likely to result in a hazardous situation.
10.5. Incompatible materials
Materials to avoid No specific material or group of materials is likely to react with the product to produce a
hazardous situation.
10.6. Hazardous decomposition products
Hazardous decomposition
products
Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

Section 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Notes (oral LD_{50}) Based on available data the classification criteria are not met.
Acute toxicity - dermal
Notes (dermal LD_{50}) Based on available data the classification criteria are not met.
Acute toxicity - inhalation
Notes (inhalation LC_{50}) Acute Tox. 4 - H332 Harmful if inhaled.
ATE inhalation (dusts/mists
mg/l)
1.81
Skin corrosion/irritation
Animal data Based on available data the classification criteria are not met.
Serious eye damage/irritation
Serious eye damage/irritation Based on available data the classification criteria are not met.
Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.
Skin sensitisation
Skin sensitisation May cause skin sensitisation or allergic reactions in sensitive individuals.
Germ cell mutagenicity
Genotoxicity - in vitro Based on available data the classification criteria are not met.
Carcinogenicity
Carcinogenicity Based on available data the classification criteria are not met.
IARC carcinogenicity None of the ingredients are listed or exempt.
Reproductive toxicity
Reproductive toxicity - fertility Based on available data the classification criteria are not met.
Reproductive toxicity - development
Based on available data the classification criteria are not met.
Specific target organ toxicity - single exposure
STOT - single exposure STOT SE 3 - H335 May cause respiratory irritation.
Target organs Respiratory system, lungs
Specific target organ toxicity - repeated exposure
STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.
Aspiration hazard
Aspiration hazard Based on available data the classification criteria are not met.
General information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation A single exposure may cause the following adverse effects: Headache. Exhaustion and weakness.

Ingestion May cause sensitisation or allergic reactions in sensitive individuals. Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.
Eye contact May cause temporary eye irritation.
Route of entry Ingestion Inhalation Skin and/or eye contact
Target organs Respiratory system, lungs
Medical considerations Skin disorders and allergies

Section 12: Ecological information

12.1. Toxicity
Toxicity Aquatic Chronic 2 - H411 Toxic to aquatic life with long lasting effects.
12.2. Persistence and degradability
Persistence and degradability The degradability of the product is not known.
12.3. Bioaccumulative potential
Bioaccumulative potential No data available on bioaccumulation.
12.4. Mobility in soil
Mobility No data available.
12.5. Results of PBT and vPvB assessment
12.6. Other adverse effects
Other adverse effects None known.

Section 13: Disposal considerations

13.1. Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. Reuse or recycle
products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
Disposal methods Dispose of surplus products and those that cannot be recycled via a licensed waste disposal
contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

Section 14: Transport information

General For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.
14.1. UN number
UN No. (ADR/RID) 3082
UN No. (IMDG) 3082
UN No. (ICAO) 3082

UN No. (ADN) 3082
14.2. UN proper shipping name
Proper shipping name
(ADR/RID)
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS ALIPHATIC POLYISOCYANATE, HEXAMETHYLENE DIISOCYANATE OLIGOMERS)
Proper shipping name
(IMDG)
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS ALIPHATIC POLYISOCYANATE, HEXAMETHYLENE DIISOCYANATE OLIGOMERS)
Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS ALIPHATIC
POLYISOCYANATE, HEXAMETHYLENE DIISOCYANATE OLIGOMERS)
Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS ALIPHATIC
POLYISOCYANATE, HEXAMETHYLENE DIISOCYANATE OLIGOMERS)
14.3. Transport hazard class(es)
ADR/RID class 9
ADR/RID classification code M6
ADR/RID label 9
IMDG class 9
ICAO class/division 9
ADN class 9
Transport labels

14.4. Packing group
ADR/RID packing group III
IMDG packing group III
ADN packing group III
ICAO packing group III
14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user
Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to
do in the event of an accident or spillage.
EmS F-A, S-F
ADR transport category 3
Emergency Action Code •3Z
Hazard Identification Number
(ADR/RID)
90
Tunnel restriction code (E)
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Transport in bulk according to
Annex II of MARPOL 73/78
and the IBC Code

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations Health and Safety at Work etc. Act 1974 (as amended).
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.
EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Commission Regulation (EU) No 453/2010 of 20 May 2010.
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 (as amended).
Dangerous Preparations Directive 1999/45/EC.
Dangerous Substances Directive 67/548/EEC.
15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

Section 16: Other information

Classification procedures

according to Regulation (EC)
1272/2008
Acute Tox. 4 - H332: STOT SE 3 - H335: Skin Sens. 1 - H317: : Calculation method. Aquatic Chronic 2 - H411: : Calculation method.
Training advice Read and follow manufacturer's recommendations. Only trained personnel should use this
material.
SDS number 21219
Hazard statements in full H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.
EUH208 Contains HEXAMETHYLENE-DI-ISOCYANATE. May produce an allergic reaction.
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.
10/

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SECTION 1: Identification of Substance/ Preparation and Company

1.2 Product identifier

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

1.3 Details of the supplier of the safety data sheet

Bradechem LTD
Unit 1 The Business Venue
Grandholm, Aberdeen
ABB22 8AA
Tel: +44 (0) 1224 822 227
Email: sales@bradechem.com

1.4 Emergency telephone number

+44 (0) 1224 822 227 (9am to 5pm)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification
Physical hazards Not Classified
Health hazards Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Skin Sens. 1 - H317
Environmental hazards Aquatic Chronic 3 - H412
2.2. Label elements
Pictogram

Signal word Warning
Hazard statements H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.
Precautionary statements P261 Avoid breathing vapour/spray.
P264 Wash contaminated skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352 IF ON SKIN: Wash with plenty of water.
P321 Specific treatment (see medical advice on this label).
P330 Rinse mouth.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P501 Dispose of contents/container in accordance with national regulations.
Contains Aspartic Ester, TETRAETHYL N,N'-(METHYLENEDICYCLOHEXANE-4,1-DIYL)BIS-DLASPARTATE, Modified polysiloxane oligomere
2.3. Other hazards
This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Aspartic Ester			
CAS number: 152637-10-0	Classification Skin Sens. 1 - H317 Aquatic Chronic 3 - H412	Classification (67/548/EEC or 1999/45/EC) R43,R52/53.	***Percent*** 30-60%

TETRAETHYL N,N'-(METHYLENEDICYCLOHEXANE-4,1-DIYL)BIS-DL-ASPARTATE			
CAS number: 136210-30-5 EC number: 429-270-1 REACH registration number: 01-0000017556-64-0000	Classification Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Acute Tox. 4 - H302 Aquatic Chronic 3 - H412	Classification (67/548/EEC or 1999/45/EC) R43 R52/53	***Percent*** 30-60%

Modified polysiloxane oligomere			
CAS number: -	Classification Not Classified	Classification (67/548/EEC or 1999/45/EC) -	***Percent*** <1 %

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

Ingestion Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin contact It is important to remove the substance from the skin immediately. In the event of any sensitisation symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention

if symptoms are severe or persist after washing.
Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue. If it is
suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.
4.2. Most important symptoms and effects, both acute and delayed
General information See Section 11 for additional information on health hazards. The severity of the symptoms
described will vary dependent on the concentration and the length of exposure.
Inhalation Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion May cause sensitisation or allergic reactions in sensitive individuals. May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.
Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Redness. Irritating to
skin.
Eye contact May cause temporary eye irritation.
4.3. Indication of any immediate medical attention and special treatment needed
Notes for the doctor Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry
powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing
media
Do not use water jet as an extinguisher, as this will spread the fire.
5.2. Special hazards arising from the substance or mixture
Specific hazards Containers can burst violently or explode when heated, due to excessive pressure build-up.
This product is toxic.
Hazardous combustion
products
Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.
5.3. Advice for firefighters
Protective actions during
firefighting
Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment
for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective

clothing. Firefighter's clothing conforming to European standard EN469 (including helmets,
protective boots and gloves) 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 No action shall be taken without appropriate training or involving any personal risk. Keep
unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid contact with skin and eyes.
6.2. Environmental precautions
Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the
aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).
6.3. Methods and material for containment and cleaning up
Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills
immediately and dispose of waste safely. Provide adequate ventilation. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
6.4. Reference to other sections
Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health
hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in
Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general
occupational hygiene
Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash

contaminated clothing before reuse. Do not eat, drink or smoke when using this product.
Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.
7.2. Conditions for safe storage, including any incompatibilities
Storage precautions Store in accordance with local regulations. Keep only in the original container. Keep container
tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.
Storage class No information available.
7.3. Specific end use(s)
Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters
TETRAETHYL N,N'-(METHYLENEDICYCLOHEXANE-4,1-DIYL)BIS-DL-ASPARTATE (CAS: 136210-30-5)
Ingredient comments No exposure limits known for ingredient(s).
DNEL Industry - Oral; Long term : 4 mg/kg/day
Industry - Dermal; Long term : 4 mg/kg/day
Industry - Inhalation; Long term : 28 (air) mg/m³
PNEC - Fresh water; 0.00013 mg/l
- Marine water; 0.000013 mg/l
- Sediment; 0.21 dry weight (Fresh Water) mg/kg
- Sediment; 0.02 dry weight (Marine) mg/kg
- Soil; 0.1 dry weight mg/kg
- STP; 31.1 mg/l
8.2. Exposure controls
Protective equipment
Appropriate engineering
controls
Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.
Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates
eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection
Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment

and the work area every day. Good personal hygiene procedures should be implemented.
Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
Environmental exposure controls Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties
Appearance Liquid.
9.2. Other information
Other information No information required.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity There are no known reactivity hazards associated with this product.
10.2. Chemical stability
Stability Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
10.3. Possibility of hazardous reactions
Possibility of hazardous
reactions
No potentially hazardous reactions known.
10.4. Conditions to avoid
Conditions to avoid There are no known conditions that are likely to result in a hazardous situation.
10.5. Incompatible materials
Materials to avoid No specific material or group of materials is likely to react with the product to produce a
hazardous situation.
10.6. Hazardous decomposition products
Hazardous decomposition
products
Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Notes (oral LD_{50}) Acute Tox. 4 - H302 Harmful if swallowed.
ATE oral (mg/kg) 1,155.78

Acute toxicity - dermal
Notes (dermal LD_{50}) Based on available data the classification criteria are not met.
Acute toxicity - inhalation
Notes (inhalation LC_{50}) Based on available data the classification criteria are not met.
Skin corrosion/irritation
Animal data Irritating.
Serious eye damage/irritation
Serious eye damage/irritation Based on available data the classification criteria are not met.
Respiratory sensitisation
Respiratory sensitisation Based on available data the classification criteria are not met.
Skin sensitisation
Skin sensitisation May cause skin sensitisation or allergic reactions in sensitive individuals.
Germ cell mutagenicity
Genotoxicity - in vitro Based on available data the classification criteria are not met.
Carcinogenicity
Carcinogenicity Based on available data the classification criteria are not met.
IARC carcinogenicity None of the ingredients are listed or exempt.
Reproductive toxicity
Reproductive toxicity - fertility Based on available data the classification criteria are not met.
Reproductive toxicity -
development
Based on available data the classification criteria are not met.
Specific target organ toxicity - single exposure
STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.
Specific target organ toxicity - repeated exposure
STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.
Aspiration hazard
Aspiration hazard Based on available data the classification criteria are not met.
General information The severity of the symptoms described will vary dependent on the concentration and the
length of exposure.
Inhalation Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion May cause sensitisation or allergic reactions in sensitive individuals. May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.
Skin contact May cause skin sensitisation or allergic reactions in sensitive individuals. Redness. Irritating to skin.
Eye contact May cause temporary eye irritation.
Route of entry Ingestion Inhalation Skin and/or eye contact
Target organs No specific target organs known.
Medical considerations Skin disorders and allergies.

SECTION 12: Ecological Information

12.1. Toxicity
Toxicity Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.
12.2. Persistence and degradability
Persistence and degradability The degradability of the product is not known.
12.3. Bioaccumulative potential
Bioaccumulative potential No data available on bioaccumulation.
12.4. Mobility in soil
Mobility No data available.
12.5. Results of PBT and vPvB assessment
12.6. Other adverse effects
Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
General information The generation of waste should be minimised or avoided wherever possible. Reuse or recycle
products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
Disposal methods Dispose of surplus products and those that cannot be recycled via a licensed waste disposal
contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).
14.1. UN number
Not applicable.
14.2. UN proper shipping name
Not applicable.
14.3. Transport hazard class(es)
No transport warning sign required.
14.4. Packing group
Not applicable.
14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant
No.
14.6. Special precautions for user
Not applicable.
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Transport in bulk according to
Annex II of MARPOL 73/78
and the IBC Code
Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations Health and Safety at Work etc. Act 1974 (as amended).
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.
EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of

Chemicals (REACH) (as amended).
Commission Regulation (EU) No 453/2010 of 20 May 2010.
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 (as amended).
Dangerous Preparations Directive 1999/45/EC.
Dangerous Substances Directive 67/548/EEC.
15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

SECTION 16: Other information

Classification procedures
according to Regulation (EC)
1272/2008
Acute Tox. 4 - H302: Skin Irrit. 2 - H315: Skin Sens. 1 - H317: : Calculation method. Aquatic Chronic 3 - H412: : Calculation method.
Training advice Read and follow manufacturer's recommendations. Only trained personnel should use this
material.
SDS number 21218
Hazard statements in full H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.