

MATERIAL SAFETY DATA SHEET



Issuing Date: 31-Mar-2011

Revision Date: 31-Mar-2011

Version 1

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

1.1. Product identifier

Product Name Coralube 737 BR-C

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

Recommended use metal forming lubricant.

Uses advised against Any other purpose.

1.3. Details of the supplier of the safety data sheet

Supplier

Houghton plc
Beacon Road
Trafford Park
Manchester
M17 1AF
Tel: +44 (0)161 874 5000

E-mail Address MSDS@uk.houghtonglobal.com

1.4. Emergency telephone number

Emergency telephone +44 (0) 161 874 5000 (9 - 5)

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

R43 - May cause sensitization by skin contact
R36/37/38 - Irritating to eyes, respiratory system and skin

2.2. Label Elements

Symbol(s)

Xi - Irritant

Contains 2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol



R-phrases(s)

R43 - May cause sensitization by skin contact
R36/37/38 - Irritating to eyes, respiratory system and skin

S-phrase(s)

S24 - Avoid contact with skin

S37 - Wear suitable gloves

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

2.3. Other hazards

None

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.2. Mixtures**

Chemical Name	EC-No	CAS-No	Weight %	Classification (67/548)	Classification (Reg. 1272/2008)	REACH Registration Number
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	225-208-0	4719-04-4	5% - 10%	Xi;R43;R22	Acute Tox. 4 (H302) Skin Sens. 1 (H317)	no data available
2-butylaminoethanol	203-904-5	111-75-1	5% - 10%	Xn;R22	Acute Tox. 4 (H302)	no data available
Orthoboric acid, compound with 2-aminoethanol	247-421-8	26038-87-9	2.5% - 5%	Xi;R36/38	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	no data available
2-aminoethanol	205-483-3	141-43-5	2.5% - 5%	C;R34 Xn;R20/21/22	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1B (H314) Acute Tox. 4 (H332)	no data available
2,4-Pentanediol, 2-methyl-	203-489-0	107-41-5	2.5% - 5%	Xi;R36/38	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	no data available
Boric acid	233-139-2	10043-35-3	1% - 2.5%	T;R60-61	Repr. 1B (H360FD)	no data available

For the full text of the R-phrases mentioned in this Section, see Section 16

For the full text of the H-Statements mentioned in this Section, see Section 16.

Additional information

...Contains.. SVHC Boric acid

4. FIRST AID MEASURES**4.1. Description of first-aid measures**

Inhalation	Move to fresh air If symptoms persist, call a physician Artificial respiration and/or oxygen may be necessary Consult a physician
Skin contact	Wash off immediately with plenty of water for at least 15 minutes If skin irritation persists, call a physician
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes If symptoms persist, call a physician
Ingestion	Do NOT induce vomiting Drink plenty of water Rinse mouth Immediate medical attention is not required
Protection of First-aiders	Use personal protective equipment

4.2. Most important symptoms and effects, both acute and delayed

Main Symptoms Itching, Difficulty breathing, May cause allergic skin reaction

4.3. Indication of immediate medical attention and special treatment needed

Notes to physician May cause sensitization of susceptible persons

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Extinguishing media which shall not be used for safety reasons

None

5.2. Special hazards arising from the substance or mixture

Special Hazard

Runoff may pollute waterways

5.3. Advice for fire-fighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment, Avoid contact with the skin and the eyes

Advice for non-emergency personnel Material can create slippery conditions

Advice for emergency responders For personal protection see section 8

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas, Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust)

6.4. Reference to other sections

Other information

See Section 8/12/13 for additional information

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Ensure adequate ventilation Wear personal protective equipment

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

Keep out of the reach of children Keep container tightly closed in a cool, well-ventilated place

7.3. Specific end uses**Specific use(s)** metal forming lubricant.**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control parameters**

Chemical Name	European Union	The United Kingdom	France	Spain	Germany
2-aminoethanol 141-43-5	TWA: 1 ppm TWA: 2.5 mg/m ³ Skin	STEL: 3 ppm STEL: 7.6 mg/m ³ TWA: 1 ppm TWA: 2.5 mg/m ³ Skin	VME: 1 ppm VME: 2.5 mg/m ³ VLCT: 3 ppm VLCT: 7.6 mg/m ³	S* VLA-EC: 3 ppm VLA-EC: 7.5 mg/m ³ VLA-ED: 1 ppm VLA-ED: 2.5 mg/m ³	MAK: 2 ppm MAK: 5.1 mg/m ³ Ceiling / Peak: 4 ppm Ceiling / Peak: 10.2 mg/m ³ TWA: 2 ppm TWA: 5.1 mg/m ³
2,4-Pentanediol, 2-methyl- 107-41-5	-	STEL: 25 ppm STEL: 123 mg/m ³ TWA: 25 ppm TWA: 123 mg/m ³	VLCT: 25 ppm VLCT: 125 mg/m ³	VLA-EC: 25 ppm VLA-EC: 123 mg/m ³	MAK: 10 ppm MAK: 49 mg/m ³ Ceiling / Peak: 20 ppm Ceiling / Peak: 98 mg/m ³
Boric acid 10043-35-3	-	-	-	-	TWA: 0.5 mg/m ³

Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
2-aminoethanol 141-43-5	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ Skin	STEL: 6 ppm TWA: 3 ppm	Skin STEL: 7.6 mg/m ³ TWA: 2.5 mg/m ³	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ Skin	TWA: 1 ppm TWA: 2.5 mg/m ³ Skin
2,4-Pentanediol, 2-methyl- 107-41-5		Ceiling: 25 ppm		TWA: 25 ppm TWA: 120 mg/m ³ STEL: 40 ppm STEL: 200 mg/m ³	Ceiling: 25 ppm Ceiling: 125 mg/m ³
Boric acid 10043-35-3		STEL: 6 mg/m ³ TWA: 2 mg/m ³			

Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
2-aminoethanol 141-43-5	Skin STEL 3 ppm STEL 7.6 mg/m ³ MAK: 1 ppm MAK: 2.5 mg/m ³	STEL: 4 ppm STEL: 10 mg/m ³ MAK: 2 ppm MAK: 5 mg/m ³	NDSch: 7.5 mg/m ³ NDS: 2.5 mg/m ³	TWA: 1 ppm TWA: 2.5 mg/m ³ Skin STEL: 2 ppm STEL: 5 mg/m ³	TWA: 3 ppm TWA: 8 mg/m ³ STEL: 6 ppm STEL: 15 mg/m ³
2,4-Pentanediol, 2-methyl- 107-41-5	STEL 10 ppm STEL 49 mg/m ³ MAK: 10 ppm MAK: 49 mg/m ³ Ceiling 10 ppm Ceiling 49 mg/m ³	STEL: 20 ppm STEL: 98 mg/m ³ MAK: 10 ppm MAK: 49 mg/m ³	NDSP: 120 mg/m ³	Ceiling: 20 ppm Ceiling: 100 mg/m ³	TWA: 25 ppm TWA: 125 mg/m ³ STEL: 25 ppm STEL: 125 mg/m ³

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye Protection

Tightly fitting safety goggles

Hand Protection

Protective gloves, Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion

Skin and body protection

Long sleeved clothing

Respiratory protection

No special protective equipment required

Hygiene measures

When using, do not eat, drink or smoke Remove and wash contaminated clothing before re-use

Environmental Exposure Controls

Do not allow material to contaminate ground water system

Thermal hazards

None under normal use conditions

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state @20°C	liquid	Appearance	clear amber
Odor	Mild	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Note</u>
pH	10.3	
Melting/freezing point	0 °C	
Boiling point/boiling range	> 98.9	
Flash Point	> 98.9 °C	Cleveland closed cup
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
upper flammability limit	No information available	
lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Relative density	1.033	@15.5C
Water Solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient: n-octanol/water	Not applicable	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Viscosity (kinematic)	No information available	
Explosive properties	Not applicable	
Oxidizing Properties	Not applicable	

Other information

VOC Content 20%

10. STABILITY AND REACTIVITY

10.1. Reactivity

None under normal use conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

None under normal use conditions

10.4. Conditions to avoid

None under normal use conditions

10.5. Incompatible Materials

Strong oxidizing agents, Strong acids

10.6. Hazardous decomposition products

Carbon dioxide (CO₂) Carbon monoxide (CO) Nitrogen oxides (NO_x) Formaldehyde

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information

Inhalation	Irritating to respiratory system.
Eye contact	Irritating to eyes.
Skin contact	Irritating to skin, May cause sensitization by skin contact
Ingestion	May cause irritation

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	763 mg/kg (Rat)	2 g/kg (Rat)	-
2-butylaminoethanol	1150 mg/kg (Rat)	-	-
2-aminoethanol	1720 mg/kg (Rat)	1 mL/kg (Rabbit) 1025 mg/kg (Rabbit)	-
2,4-Pentanediol, 2-methyl-	3692 mg/kg (Rat)	8560 µL/kg (Rabbit)	310 mg/m ³ (Rat) 1 h
Boric acid	2660 mg/kg (Rat)	2000 mg/kg (Rabbit)	0.16 mg/L (Rat) 4 h

Irritation Irritating to eyes, respiratory system and skin Precautionary classification for respiratory irritation based on judgement/experience of the supplier

Corrosivity None

Chronic toxicity

Sensitization	May cause sensitization by skin contact
Repeated Dose Toxicity	None known
Carcinogenicity	During use, this product may release formaldehyde, this does not give rise to a carcinogenic classification for the product.
Mutagenicity	None known
Toxicity to Reproduction	None known

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
2-aminoethanol	15: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	227: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 3684: 96 h <i>Brachydanio rerio</i> mg/L LC50 static 300-1000: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 114-196: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 200: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through	-	65: 48 h <i>Daphnia magna</i> mg/L EC50
2,4-Pentanediol, 2-methyl-	-	10500-11000: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 10000: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 8690: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 10700: 96 h <i>Pimephales promelas</i> mg/L LC50 static	-	2700 - 3700: 48 h <i>Daphnia magna</i> mg/L EC50
Boric acid	-	1020: 72 h <i>Carassius auratus</i> mg/L LC50 flow-through	-	115 - 153: 48 h <i>Daphnia magna</i> mg/L EC50

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

Chemical Name	log Pow
2-aminoethanol	-1.91

2,4-Pentanediol, 2-methyl-	<0.14
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12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

No information available

12.6. Other adverse effects

None known

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products Dispose of as hazardous waste in compliance with local and national regulations

Special risks and unsuitable means when handling product waste/waste packaging May cause sensitization by skin contact

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal

Other information According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

14.1. UN-Number

Not regulated

14.2. UN proper shipping name

Not regulated

14.3. Transport hazard class

Not regulated

14.4. Packing group

Not regulated

14.5. Environmental Hazards

None

14.6. Special precautions for users

None

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

Not applicable

IMDG/IMO Not regulated**ADR/RID** Not regulated**ICAO/IATA** Not regulated**15. REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Take note of Dir 94/33/EC on the protection of young people at work.

International Inventories

All of the components in the product are on the following Inventory lists:

Chemical Name	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	225-208-0	-	T	X	-	X	(5)-998 (5)-1080	X	X	KE-33998
2-butylaminoethanol	203-904-5	-	Present	X	-	X	(2)-295	X	X	KE-04200
Orthoboric acid, compound with 2-aminoethanol	247-421-8	-	Present	X	-	X	-	X	X	KE-03494
2-aminoethanol	205-483-3	-	Present	X	-	X	(2)-301	X	X	KE-20493
2,4-Pentandiol, 2-methyl-	203-489-0	-	Present	X	-	X	(2)-240	X	X	KE-24702
Boric acid	233-139-2	-	Present	X	-	X	(1)-63	X	X	KE-03499

TSCA	Complies
EINECS/ELINCS	-
DSL/NDSL	-
PICCS	-
ENCS	-
IECSC	-
AICS	-
KECL	-

Legend**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances

15.2. Chemical Safety Assessment

No information available

16. OTHER INFORMATION**Full text of R-phrases referred to under sections 2 and 3**

R43 - May cause sensitization by skin contact
R22 - Harmful if swallowed
R34 - Causes burns
R61 - May cause harm to the unborn child
R60 - May impair fertility
R36/38 - Irritating to eyes and skin
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed
R36/37/38 - Irritating to eyes, respiratory system and skin

Full text of H-Statements referred to under section 2 and 3

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled

Exposure scenario

No information available

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This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 & (EC) No. 1272/2008 & (EC) 1999/45.

Acts of Parliament: The Health and Safety at Work etc. Act 1974. Environment Protection Act 1990., Statutory Instruments: Control of Substances Hazardous to Health Regulations 2002. Chemicals (Hazard Information and Packaging) Regulations 2009., The Carriage of Dangerous Goods Regulations 2009., The Hazardous Waste (England and Wales) Regulations 2005., Workplace exposure limits (EH40)., The classification detailed on this Safety Data Sheet refer to the neat material only. Dilution of the product may reduce the classification.

Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.