



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

1.1. Product identifier

Product Code(s) (1 / 5 / 20 Litres)	1090120 / 1090130 / 1090160
Product Name	Anti-Rust
Product Registration number	Contains 2-Aminoethanol, 2,2'-(cyclohexylimino)bisethanol

EC #

Pure substance/mixture

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

Recommended Use	Metalworking fluid
Uses advised against	Any other purpose.

1.3. Details of the supplier of the safety data sheet

Manufacturer, Importer, Supplier

Spectrographic Limited
Unit 4, The Sidings
Station Road
Guiseley
LS20 8BX
Tel: +44 (0)1943 879001
Sales@spectrographic.co.uk

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin corrosion/irritation	Category 1 Sub-category B - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Specific target organ toxicity (single exposure)	Category 3 - (H335)
Chronic aquatic toxicity	Category 3 - (H412)

2.2. Label Elements

Contains 2-Aminoethanol, 2,2'-(cyclohexylimino)bisethanol



Signal word
DANGER

Hazard statements

H314 - Causes severe skin burns and eye damage
 H335 - May cause respiratory irritation
 H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)

P273 - Avoid release to the environment
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
 P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances / 3.2. Mixtures

This product is a mixture. Health hazard information is based on its ingredients

Chemical name	EC-No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
2-Aminoethanol	205-483-3	141-43-5	2.5% - 10%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1B (H314) Acute Tox. 4 (H332) STOT SE 3 (H335) Aquatic Chronic 3 (H412)	01-2119486455-28-xxx x
2,2',2''-Nitrilotriethanol	203-049-8	102-71-6	2.5% - 10%	**	01-2119486482-31-xxx x
Neutralised boric acid	233-139-2	10043-35-3*	2.5% - 10%	Repr. 1B (H360FD)	01-2119486683-25-xxx x
2,2'-(cyclohexylimino)bisethanol	224-809-5	4500-29-2	2.5% - 10%	Acute Tox. 4 (H302) Skin Corr. 1C (H314) STOT RE 2 (H373) Aquatic Chronic 3 (H412)	01-2119962183-38-xxx x
Neutralised 2-Aminoethanol	205-483-3	141-43-5*	1% - 2.5%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Aquatic Chronic 3 (H412)	01-2119486455-28-xxx x
Pyridine-2-thiol 1-oxide, sodium salt	223-296-5	3811-73-2	0% - 1%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	no data available

** Substances for which there are Community workplace exposure limits CAS Numbers marked with * indicate that the substance is neutralised during the manufacturing process. The substance is present as part of a complex mixture, usually called "ionic mixture", which is intended to facilitate the process/application of the product in use.

One or more substances contained within this product has a specific concentration limit. This has been taken into account when calculating the overall hazard classification of the product.

Full text of H- and EUH-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first-aid measures

General advice	Immediate medical attention is required. Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray.
Inhalation	Move to fresh air. If symptoms persist, call a physician.
Skin contact	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. Immediate medical attention is required.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and

continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Seek immediate medical attention/advice.

Ingestion

Clean mouth with water. Drink plenty of water. Do not induce vomiting without medical advice.

Protection of First-aiders

Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

4.2. Most important symptoms and effects, both acute and delayed**Main Symptoms**

Causes burns, blistering, Breathing difficulties

4.3. Indication of immediate medical attention and special treatment needed**Notes to physician**

Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment:, Use CO2, dry chemical, or foam, Water spray or fog

Extinguishing media which shall not be used for safety reasons

None

5.2. Special hazards arising from the substance or mixture**Special Hazard**

Water runoff can cause environmental damage.

Hazardous decomposition products

None under normal use

5.3. Advice for firefighters**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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Advice for non-emergency personnel

Evacuate personnel to safe areas. Material can create slippery conditions. Keep people away from and upwind of spill/leak.

Advice for emergency responders For personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

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). Dike to collect large liquid spills.

6.4. Reference to other sections

Refer to protective measures listed in Sections 7 and 8

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment.

7.2. Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep at temperatures between 5 and 40 °C.

Recommended Shelf Life

Shelf life 12 months.

Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases

7.3. Specific end uses

Specific use(s) Metalworking fluid

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Exposure limits***Legend*

(s) - Skin; TWA - Time-Weighted Average; STEL - Short Term Exposure Limit; Ceiling - Ceiling Value; TLV® - Threshold Limit Value; PEL (Permissible Exposure Limit)

Chemical name	European Union	United Kingdom	France	Spain
2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ limite contraignante STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	VLA-ED: 1 ppm VLA-ED: 2.5 mg/m ³ (valor límite indicativo) VLA-EC: 3 ppm VLA-EC: 7.5 mg/m ³ (s)
2,2',2''-Nitrilotriethanol				VLA-ED: 5 mg/m ³

United Kingdom Workplace exposure limits (EH40).

France Valeurs limites d'exposition professionnelle aux agents chimiques en France ED 984 (par l'INRS).

Spain Límites de Exposición Profesional Para Agentes Químicos en España (Ley 31/1995).

Chemical name	Germany	Italy	Portugal	Netherlands
2-Aminoethanol	AGW TWA: 0.2 ppm AGW TWA: 0.5 mg/m ³ Überschreitungsfaktor 1 (II)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ (Valor-limite indicativo) STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 2.5 mg/m ³ STEL: 7.6 mg/m ³ (s)
2,2',2''-Nitrilotriethanol			TWA: 5 mg/m ³	
Pyridine-2-thiol 1-oxide, sodium salt	AGW TWA: 1 mg/m ³ (Einatembare fraktion)			

	Überschreitungsfaktor 2 (II)			
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Germany TRGS 900 - Arbeitsplatzgrenzwerte, Technische Regeln für Gefahrstoffe (TRGS).
 Italy Istituto Superiore per la Prevenzione e la Sicurezza del Lavoro (ISPESL), Allegato XXXVIII e Allegato XLIII - Valori Limite di Esposizione Professionale.
 Portugal Valores-limite e índices biológicos de exposição profissional a agentes químicos. Quadro 1 - Valores Limite de Exposição (Norma Portuguesa NP 1796:2014).
 Netherlands Grenswaarden gezondheidsschadelijke stoffen; Arbeidsomstandighedenregeling.

Chemical name	Austria	Switzerland	Poland	Ireland
2-Aminoethanol	MAK TWA: 1 ppm MAK TWA: 2.5 mg/m ³ MAK STEL: 3 ppm MAK STEL: 7.6 mg/m ³ 4 X 15 min (s)	TWA: 2 ppm TWA: 5 mg/m ³ STEL: 4 ppm STEL: 10 mg/m ³	TWA: 2.5 mg/m ³ STEL: 7.5 mg/m ³	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)
2,2',2''-Nitrilotriethanol	MAK TWA: 0.8 ppm MAK TWA: 5 mg/m ³ (Einatembare Fraktion) MAK STEL: 1.6 ppm MAK STEL: 10 mg/m ³ (Einatembare fraktion) 4 X 15 min	TWA: 5 mg/m ³ einatembarer staub STEL: 20 mg/m ³		TWA: 5 mg/m ³ STEL: 15 mg/m ³
Pyridine-2-thiol 1-oxide, sodium salt	MAK TWA: 1 mg/m ³ MAK STEL: 4 mg/m ³ 4 X 15 min (s)	TWA: 1 mg/m ³ einatembarer staub STEL: 2 mg/m ³ (s)		

Austria Verordnung des Bundesministers für Wirtschaft und Arbeit über Grenzwerte für Arbeitsstoffe und über krebserzeugende Arbeitsstoffe ("Maximale Arbeitsplatzkonzentrationen" - MAK und "Technische Richtkonzentrationen" - TRK).

Switzerland Grenzwerte am Arbeitsplatz 2016 - SUVAPro.

Poland Rozporządzenie Ministra Pracy i Polityki Społecznej z dnia 6 czerwca 2014 w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy (Dz.U. 2016 Nr. 944).

Ireland 2016 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001.

Chemical name	Finland	Denmark	Norway	Sweden
2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 2 ppm STEL: 5 mg/m ³ (s)	LLV: 1 ppm LLV: 2.5 mg/m ³ STLV: 3 ppm (Indikativ) STLV: 7.5 mg/m ³ (Indikativ) STLV: 3 ppm (Bindande) STLV: 7.5 mg/m ³ (Bindande) (s)
2,2',2''-Nitrilotriethanol	TWA: 5 mg/m ³	TWA: 0.5 ppm TWA: 3.1 mg/m ³	TWA: 5 mg/m ³ STEL: 10 mg/m ³	LLV: 5 mg/m ³ LLV: 0.8 ppm STLV: 10 mg/m ³ (Indikativ) STLV: 1.6 ppm (Indikativ) (s)
Pyridine-2-thiol 1-oxide, sodium salt		TWA: 1 mg/m ³ (s)		

Finland Förordningen om koncentrationer som befunnits skadliga, 268/2014 - HTP-arvot 2014.

Denmark Bekendtgørelse om grænseværdier for stoffer og materialer. Arbejdstilsynets bekendtgørelse nr. 507 Bilag 2 Afsnit A.

Norway Forskrift om tiltaksverdier og grenseverdier for fysiske og kjemiske faktorer i arbeidsmiljøet samt smitterisikogrupper for biologiske faktorer (Forskrift om tiltaks- og grenseverdier), FOR-2011-12-06-1358, FOR-2016-06-21-760, FOR-2016-12-22-1860.

Sweden Arbetsmiljöverkets föreskrifter om hygieniska gränsvärden och allmänna råd om tillämpningen av föreskrifterna.

Chemical name	Czech Republic	Hungary	Bulgaria	Romania
2-Aminoethanol	TWA: 2.5 mg/m ³ Ceiling: 7.5 mg/m ³ (s)	TWA: 2.5 mg/m ³ STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)
2,2',2''-Nitrilotriethanol	TWA: 5 mg/m ³ Ceiling: 10 mg/m ³ (s)			

Czech Republic Narizeni vlady 93/2012, kterym se meni narizeni vlady c.361/2007 Sb., kterym se stanoví podmínky ochrany zdravi pri práci, ve zneni narizeni vlady c.68/2010 Sb.

Hungary 25/2000. (IX. 30.) EüM-SzCsM együttes rendelet a munkahelyek kémiai biztonságáról (62/2016. (XII.29.)).

Bulgaria НАРЕДБА #13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа.

Romania Valori Limit Obligatorii Nationale de expunere profesională ale agenților chimic - Anex Nr.1 Publicat în Monitorul Oficial, Partea I nr. 845.

Chemical name	Greece	Cyprus	Turkey	Malta
2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)

Greece Οριακές Τιμές Επαγγελματικής Έκθεσης - Προστασία της υγείας και της ασφάλειας των εργαζομένων που εκτίθενται σε ορισμένους καρκινογόνους και μεταλλαξιογόνους παράγοντες 127/2000.

Cyprus Κανονισμός 268/2001 του Υπουργικού Συμβουλίου - Ασφάλεια και Υγεία στην Εργασία (Χημικοί Παράγοντες), 6 Ιουλίου, 2001 - Όπως τροποποιήθηκε από τον Κανονισμό 44/2015 (δημοσιεύθηκε στην Επίσημη Εφημερίδα της Κυβέρνησης της Κύπρου στις 13 Φεβρουαρίου, 2015, Παράρτημα ΙΙΙ(Ι), Αριθμ. 4850).

Turkey Kimyasal Maddelerle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik.

Malta Occupational Health and Safety Authority Act: Chapter 424.

Chemical name	Belgium	Luxembourg	Iceland	Croatia
2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)
2,2',2''-Nitrilotriethanol	TWA: 5 mg/m ³		TWA: 5 mg/m ³	

Belgium Arrêté royal relatif à la protection de la santé et de la sécurité des travailleurs contre les risques liés à des agents chimiques sur le lieu de travail.

Luxembourg Règlement grand-ducal du 28 juillet 2011 concernant la protection de la santé et de la sécurité des travailleurs contre les risques liés à des agents chimiques sur le lieu de travail.

Iceland Reglugerð um reglugerðir sem heyra undir Vinnuverndarlögin nr. 46/1980 um aðbúnað, hollustuhætti og öryggi á vinnustöðum. 390/2009 - Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum.

Croatia Pravilnik o izmjenama i dopunama Pravilnika o graničnim vrijednostima izloženosti opasnim tvarima pri radu i o biološkim graničnim vrijednostima.

Chemical name	Russia	Estonia	Latvia	Lithuania
2-Aminoethanol	MAC: 0.5 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 0.2 ppm TWA: 0.5 mg/m ³ STEL: 3 ppm STEL: 7.6 mg/m ³ (s)	TWA: 3 ppm TWA: 8 mg/m ³ STEL: 6 ppm STEL: 15 mg/m ³ (S)
2,2',2''-Nitrilotriethanol		TWA: 5 mg/m ³ STEL: 10 mg/m ³		TWA: 5 mg/m ³ STEL: 10 mg/m ³

Russia ГН 2.2.5.1313-03 "Гигиенические нормативы. Предельно допустимые концентрации (ПДК) вредных веществ в воздухе рабочей зоны".

Estonia Tookeskonna keemiliste ohutegurite piinormid.

Latvia Ministru Kabineta noteikumi Nr. 325 - Darba aizsardzības prasības, saskaroties ar ķīmiskajām vielām darba vietās.

Lithuania Del Lietuvos higienos normos HN 23:2011 "Cheminiu medžiagu profesinio poveikio ribiniai dydžiai. Matavimo ir poveikio vertinimo bendrieji reikalavimai".

Chemical name	Belarus	Ukraine	Slovakia	Slovenia
2-Aminoethanol	(s)		TWA: 1 ppm TWA: 2.5 mg/m ³ (s)	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: STEL ppm STEL: STEL mg/m ³ (s)
2,2',2''-Nitrilotriethanol				TWA: 5 mg/m ³
Pyridine-2-thiol 1-oxide, sodium salt				TWA: 1 mg/m ³ STEL: STEL mg/m ³ (s)

Belarus Санитарные нормы, правила и гигиенические нормативы "Перечень регламентированных в воздухе рабочей зоны вредных веществ".

Slovakia Nariadenie vlády Slovenskej republiky z 16. januára 2002 o ochrane zdravia pri práci s karcinogénnymi a mutagénymi faktormi.

Slovenia Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu.

Chemical name	Serbia	Macedonia	Liechtenstein	South Africa
2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm	TWA: 1 ppm TWA: 2.5 mg/m ³ STEL: 3 ppm	

	STEL: 7.6 mg/m ³ (s)	STEL: 7.5 mg/m ³ (s)	STEL: 7.6 mg/m ³ (s)	
2,2',2''-Nitrilotriethanol		TWA: 5 mg/m ³		
Pyridine-2-thiol 1-oxide, sodium salt		TWA: 1 mg/m ³ STEL: 4 mg/m ³ (s)		

Serbia Pravilnik o preventivnim merama za bezbedan i zdrav rad pri izlaganju hemijskim materijama, Prilog 1- Obavezajuće granične vrednosti izloženosti hemijskim materijama na radnom mestu.

Macedonia Правилник минималните барања за безбедност и здравје при работа вработени од ризици поврзани со изложување на хемиски супстанции.

Liechtenstein 822.103.3 - Verordnung ueber die Sicherheit und den Gesundheitsschutz der Arbeitnehmer am Arbeitsplatz, Arbeitnehmerschutz.

Derived No Effect Level (DNEL)

Workers Systemic toxicity

Chemical name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
2-Aminoethanol		1 mg/kg				
Neutralised boric acid		392 mg/kg	8.3 mg/m ³			
2,2'-(cyclohexylimino)bisethanol		1.25 mg/kg	2.2 mg/m ³			
Neutralised 2-Aminoethanol		1 mg/kg				

Workers Local effects

Chemical name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
2-Aminoethanol			3.3 mg/m ³			
2,2'-(cyclohexylimino)bisethanol			1 mg/m ³			
Neutralised 2-Aminoethanol			3.3 mg/m ³			

Consumers Systemic toxicity

Chemical name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
2-Aminoethanol	3.75 mg/kg	0.24 mg/kg	2 mg/m ³			
Neutralised boric acid	0.98 mg/kg	196 mg/kg	4.15 mg/m ³	0.98 mg/kg		
2,2'-(cyclohexylimino)bisethanol	893 µg/kg					
Neutralised 2-Aminoethanol	3.75 mg/kg	0.24 mg/kg	2 mg/m ³			

Consumers Local effects

Chemical name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
2-Aminoethanol			2 mg/m ³			
Neutralised 2-Aminoethanol			2 mg/m ³			

Predicted No Effect Concentration (PNEC)

Chemical name	Fresh water	Sea water	Fresh water sediment	Sea sediment	Soil
2-Aminoethanol	0.085 mg/l	0.0085 mg/l	0.425 mg/kg	0.0425 mg/kg	0.035 mg/kg
Neutralised boric acid	1.35 mg/l	1.35 mg/l	1.8 mg/kg	1.8 mg/kg	5.4 mg/kg
2,2'-(cyclohexylimino)bisethanol	0.81 mg/L	0.081 mg/L	3.8 mg/kg	0.38 mg/kg	0.28 mg/kg
Neutralised 2-Aminoethanol	0.085 mg/l	0.0085 mg/l	0.425 mg/kg	0.0425 mg/kg	0.035 mg/kg

8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Showers. Eyewash stations.

Personal protective equipment

Engineering controls should be considered as the first line of protection against adverse exposure to harmful substances. Administrative controls and PPE should be used in the absence of engineering controls or as supplemental controls where engineering controls are insufficient in reducing specific exposures to an acceptable level.

Eye Protection

Tightly fitting safety goggles. Eye protection must conform to standard EN 166.

Hand Protection

The following glove type may be suitable for handling this product. Protective gloves complying with EN 374.

Nitrile rubber

Glove thickness => 0.38 mm Break through time => 480 min

Butyl rubber

Glove thickness => 0.64 mm Break through time => 480 min

Neoprene™

Glove thickness => 0.64 mm Break through time => 480 min

Glove material suitability will vary depending on specific use conditions. Consideration should be given to variables such as operational characteristics, anticipated contact time, task requirements and other factors relevant to the selection of PPE. 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. Any specific glove information provided is based on published literature and glove manufacturer data. Barrier creams may help to protect the exposed areas of skin. Barrier creams should not be applied after exposure has occurred. Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Skin and body protection

Impervious clothing. Impervious gloves. Boots.

Respiratory protection

Do not breathe vapors, mist or gas. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

This information is based on the state in which the specific product is delivered and on the intended use specified within this SDS. This information is provided based on literature reference, manufacturer specifications and recommendations and/or derived by analogy with similar substances. The level of protection and types of exposure controls will vary depending on potential exposure conditions.

Hygiene measures

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing is recommended. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapors, mist or gas.

Environmental Exposure Controls

Do not allow material to contaminate ground water system.

Thermal hazards

None under normal use conditions

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	liquid	Appearance	clear , light yellow
Odor	amine-like	Odor threshold	Not Determined
Property	Values	Remarks	
pH	9.8	@3%	
Melting point / freezing point	Not Determined		
Boiling point / boiling range	> 100 °C / > 212 °F		
Flash point	Not applicable		

Evaporation rate	Not Determined
Flammability (solid, gas)	Not Determined
Flammability Limit in Air	
Upper flammability limit:	Not Determined
Lower flammability limit:	Not Determined
Vapor pressure	Not Determined
Vapor density	Not Determined
Relative density	1.0700
Solubility(ies)	Soluble in water
Partition coefficient	Not Determined
Autoignition temperature	Not Determined
Decomposition temperature	Not Determined
Kinematic viscosity	Not Determined
Explosive properties	Not applicable
Oxidizing Properties	Not applicable

g/cm3 @20°C

9.2. Other information

Viscosity, kinematic (100°C)	Not Determined
Pour Point	Not Determined
VOC Content (ASTM E-1868-10)	Not Determined
VOC content	Not Determined

SECTION 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

Do not freeze

10.5. Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases

10.6. Hazardous decomposition products

None under normal use conditions

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects****Product Information - Principle Routes of Exposure**

Inhalation	Irritating to respiratory system
Eye contact	May result in permanent damage including blindness
Skin contact	Corrosive

Ingestion Ingestion causes burns of the upper digestive and respiratory tracts

Acute toxicity - Product Information

Product does not present an acute toxicity hazard based on known or supplied information.

Acute toxicity - Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-Aminoethanol	1720 mg/kg (Rat)	= 1 mL/kg (Rabbit) = 1025 mg/kg (Rabbit)	
2,2',2''-Nitrilotriethanol		> 16 mL/kg (Rat) > 2000 mg/kg (Rabbit)	
Neutralised boric acid	3500 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h
2,2'-(cyclohexylimino)bisethanol	~2000 mg/kg (Rat)		
Neutralised 2-Aminoethanol	1720 mg/kg (Rat)	= 1 mL/kg (Rabbit) = 1025 mg/kg (Rabbit)	
Pyridine-2-thiol 1-oxide, sodium salt	1208 mg/kg (Rat)	1800 mg/kg (Rabbit)	1.08 mg/l (4h) (Rat)

Skin corrosion/irritation Corrosive. Causes burns.

Serious eye damage/eye irritation Causes severe eye damage.

Sensitization

Respiratory Sensitization Skin sensitization

Based on available data, the classification criteria are not met.
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Contains a known or suspected reproductive toxin.

Specific target organ systemic toxicity (single exposure)

Based on available data, the classification criteria are not met

Specific target organ systemic toxicity (repeated exposure)

Based on available data, the classification criteria are not met

Aspiration hazard

Based on available data, the classification criteria are not met.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
2-Aminoethanol	2.8: 72 h Pseudokirchneriella subcapitata mg/L EC50	227: 96 h Pimephales promelas mg/L LC50 flow-through 3684: 96 h Brachydanio rerio mg/L LC50 static 300 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 114 - 196: 96 h Oncorhynchus mykiss mg/L		65: 48 h Daphnia magna mg/L EC50

		LC50 static 200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through		
2,2',2''-Nitrilotriethanol	216: 72 h Desmodesmus subspicatus mg/L EC50 169: 96 h Desmodesmus subspicatus mg/L EC50	10600-13000: 96 h Pimephales promelas mg/L LC50 flow-through 1000: 96 h Pimephales promelas mg/L LC50 static 450-1000: 96 h Lepomis macrochirus mg/L LC50 static		1386: 24 h Daphnia magna mg/L EC50
Neutralised boric acid	>28: 72 h Selenastrum capricornutum mg/L EC50	1020: 72 h Carassius auratus mg/L LC50 flow-through 627: 96 h Oncorhynchus tschawytscha mg/L LC50		115 - 153: 48 h Daphnia magna mg/L EC50
2,2'-(cyclohexylimino)bisetha nol	12.5: 75 h Desmodesmus subspicatus mg/L EC50	> 100: 96 h Brachydanio rerio mg/L LC50		163: 48 h Daphnia magna mg/L EC50
Neutralised 2-Aminoethanol	2.8: 72 h Pseudokirchneriella subcapitata mg/L EC50	227: 96 h Pimephales promelas mg/L LC50 flow-through 3684: 96 h Brachydanio rerio mg/L LC50 static 300 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 114 - 196: 96 h Oncorhynchus mykiss mg/L LC50 static 200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through		65: 48 h Daphnia magna mg/L EC50
Pyridine-2-thiol 1-oxide, sodium salt	0.46: 72 h Selenastrum capricornutum mg/L EC50	0.0066: 96 h Oncorhynchus mykiss mg/L LC50		0.022: 48 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Chemical name	Partition coefficient
2-Aminoethanol	-1.91
2,2',2''-Nitrilotriethanol	-2.53
Neutralised boric acid	-0.757
Neutralised 2-Aminoethanol	-1.91
Pyridine-2-thiol 1-oxide, sodium salt	-2.64

12.4. Mobility

Miscible with water

12.5. Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

None known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

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

Products

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Observe all label precautions until container is cleaned, reconditioned or destroyed.

Other Data According to the European Waste Catalog, 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.

SECTION 14: TRANSPORT INFORMATION**14.1. UN-Number**

UN2735

14.2. UN proper shipping name

AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BISETHANOL)

14.3. Transport hazard class

8

14.4. Packing Group

II

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

UN/ID no	UN2735
Proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BISETHANOL)
Hazard Class	8
Packing Group	II
EmS-No	F-A, S-B
Vessel Stowage Location Code	A
Description	UN2735, AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BISETHANOL), 8, II

ADR

UN/ID no	UN2735
Proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BISETHANOL)
Hazard Class	8
Packing Group	II
Classification code	C7
Hazard identification number	80
Description	UN2735, AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BISETHANOL), 8, II (E)

IATA

UN/ID no	UN2735
Proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BIETHANOL)
Hazard Class	8
Packing Group	II
ERG Code	8L
Description	UN2735, AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BIETHANOL), 8, II

ADN

UN/ID no	UN2735
Proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BIETHANOL)
Hazard Class	8
Packing Group	II
Classification code	C7
Hazard label(s)	8
Description	UN2735, AMINES, LIQUID, CORROSIVE, N.O.S. (2-AMINOETHANOL, 2,2'-(CYCLOHEXYLIMINO)BIETHANOL), 8, II

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU legislation**

The Classification, Labeling and Packaging of Substances and Mixtures (CLP) Regulation (EC 1272/2008)
 Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) Regulation (EC 1907/2006)
 Safety Data Sheet according to Regulation EC 1907/2006 (REACH) with its amendment regulation EC 2015/830
 European Agreement concerning the International Carriage of Dangerous Goods by Road/ Regulations concerning the
 International Carriage of Dangerous Goods by Rail
 International Civil Aviation Organization / International Air Transport Association Dangerous Goods Regulation

Restrictions on use

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII) .

National regulations**Germany****WGK Classification**

Hazard to water/Class 2

United Kingdom

Statutory Instruments: Control of Substances Hazardous to Health Regulations 2002. Chemicals (Hazard Information and Packaging) Regulations 2009.

Acts of Parliament: The Health and Safety at Work etc. Act 1974. Environment Protection Act 1990.

Regulation on classification, labeling, of hazardous chemicals (2002 changing 2005).Appendix VI to Regulation on classification, labeling etc. of hazardous chemicals (2002 changing 2010), list of hazardous substances (as amended). Guidelines for submission and declaration of hazardous waste (2009).Transport of dangerous goods: ADR, RID, IMDG and IATA. Administrative norms for pollution of the atmosphere, 2009.

Workplace exposure limits (EH40)

International Regulations

Ozone-depleting substances (ODS)

Not applicable

Persistent Organic Pollutants

Not applicable

Chemicals Subject to Prior Informed Consent (PIC)

Not applicable

International Inventories

Inventory information may be utilizing alternative CAS#s or exemptions beyond those stated within this document. For further information, please contact: ProductStewardship@houghtonintl.com.

TSCA	Complies
DSL	All Components are NOT on the Chemical Inventory
AICS	Complies
PICCS	Complies
KECL	Complies
IECSC	Complies
ENCS	Does not Comply
TCSI	Complies
NZIoC	Does not Comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
AICS - Australian Inventory of Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
ENCS - Japan Existing and New Chemical Substances
TCSI - Taiwan National Existing Chemical Inventory
NZIoC - New Zealand Inventory of Chemicals

Other Information**15.2. Chemical Safety Assessment**

A chemical safety assessment according to regulation (EC) No. 1907/2006 is not required

SECTION 16: OTHER INFORMATION**Key or legend to abbreviations and acronyms used in the safety data sheet**

Repr.-Reproduction toxicity
 Asp. Tox. - Aspiration Toxicity
 Acute Tox. - Acute Toxicity
 Aquatic Acute - Acute Aquatic Toxicity
 Aquatic Chronic - Chronic Aquatic Toxicity
 Eye Dam. - Eye Damage
 Eye Irrit. - Eye Irritation
 Skin Corr. - Skin Corrosion
 Skin Irrit. - Skin Irritation
 Skin Sens. - Skin Sensitizer

Resp. Sens. - Respiratory Sensitizer
 STOT SE - Specific target organ systemic toxicity (Single exposure)
 STOT RE - Specific target organ systemic toxicity (repeated exposure)
 VOC - Volatile organic compounds

Full text of H-Statements which may be referred to under Sections 2 and 3

<ul style="list-style-type: none"> • H224 - Extremely flammable liquid and vapor • H225 - Highly flammable liquid and vapor • H226 - Flammable liquid and vapor • H270 - May cause or intensify fire; oxidizer • H271 - May cause fire or explosion; strong oxidizer • H272 - May intensify fire; oxidizer • H290 - May be corrosive to metals • H300 - Fatal if swallowed • H301 - Toxic if swallowed • H302 - Harmful if swallowed • H304 - May be fatal if swallowed and enters airways • H310 - Fatal in contact with skin • H311 - Toxic in contact with skin • H312 - Harmful in contact with skin • H314 - Causes severe skin burns and eye damage • H315 - Causes skin irritation • H317 - May cause an allergic skin reaction • H318 - Causes serious eye damage • H319 - Causes serious eye irritation • H330 - Fatal if inhaled • 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 • H336 - May cause drowsiness or dizziness • H340 - May cause genetic defects 	<ul style="list-style-type: none"> • H341 - Suspected of causing genetic defects • H350 - May cause cancer • H351 - Suspected of causing cancer • H360 - May damage fertility or the unborn child • H361 - Suspected of damaging fertility or the unborn child • H362 - May cause harm to breast-fed children • H370 - Causes damage to organs • H371 - May cause damage to organs • H372 - Causes damage to organs through prolonged or repeated exposure • H373 - May cause damage to organs through prolonged or repeated exposure • H400 - Very toxic to aquatic life • H410 - Very toxic to aquatic life with long lasting effects • H411 - Toxic to aquatic life with long lasting effects • H412 - Harmful to aquatic life with long lasting effects • H413 - May cause long lasting harmful effects to aquatic life • H360Df - May damage the unborn child. Suspected of damaging fertility • H360D - May damage the unborn child • H360FD - May damage fertility. May damage the unborn child • H360F - May damage fertility • H361d - Suspected of damaging the unborn child • H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child • H361f - Suspected of damaging fertility • EUH066 - Repeated exposure may cause skin dryness or cracking • EUH210 - Safety data sheet available on request • EUH208 - May produce an allergic reaction
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Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]

Physical hazards	On basis of test data
Health Hazards	Calculation Method
Environmental Hazards	Calculation Method

Revision Date 09-15-2017

Revision Note Not applicable.

Disclaimer

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