SAFETY DATA SHEET
Formula 409® Antibacterial All-Purpose Cleaner - Lemon - US

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name: Formula 409® Antibacterial All-Purpose Cleaner - Lemon - US
Product number: FO00889US

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Cleaning agent.
Uses advised against: No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet
Supplier: Cbee Europe Ltd
Eton House
2nd Floor
18-24 Paradise Road
Richmond
TW9 1SE, UK
Tel: +44 (0) 208 614 7120
Fax: +44 (0) 208 940 2040
consumerservices@clorox.co.uk

1.4. Emergency telephone number
Emergency telephone: +44 (0) 208 614 7120
Monday - Thursday: 09:00 - 17:30
Friday: 09:00 - 17:00

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification
Physical hazards: Not Classified

Health hazards: Skin Irrit. 2 - H315 Eye Irrit. 2 - H319

Environmental hazards: Not Classified

Classification (67/548/EEC or 1999/45/EC)
Xi; R36/38

2.2. Label elements
Pictogram

Signal word: Warning
Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements
P102 Keep out of reach of children.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash contaminated skin thoroughly after handling.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.

Detergent labelling
< 5% perfumes

Supplementary precautionary statements
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.

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

<table>
<thead>
<tr>
<th>Compound</th>
<th>CAS number</th>
<th>EC number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Aminoethanol</td>
<td>141-43-5</td>
<td>205-483-3</td>
<td>0.25 - &lt;0.5%</td>
</tr>
<tr>
<td>Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides</td>
<td>68424-85-1</td>
<td>270-325-2</td>
<td>0.025 - &lt;0.25%</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>200-578-6</td>
<td>0.025 - &lt;0.25%</td>
</tr>
</tbody>
</table>

Classification
Acute Tox. 4 - H302
Acute Tox. 4 - H312
Acute Tox. 4 - H332
Skin Corr. 1B - H314
STOT SE 3 - H335

Classification (67/548/EEC or 1999/45/EC)
Xn; R20/21/22. C; R34

Aquatic Acute 1 - H400

Classification (67/548/EEC or 1999/45/EC)
T; R24/25. C; R34. N; R50

Classification (67/548/EEC or 1999/45/EC)
F; R11

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

Inhalation
**Formula 409® Antibacterial All-Purpose Cleaner - Lemon - US**

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

**Ingestion**
Rinse mouth thoroughly with water. Give plenty of water to drink. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

**Skin contact**
Wash skin thoroughly with soap and water.

**Eye contact**
Remove any contact lenses and open eyelids wide apart. Continue to rinse.

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

**Inhalation**
Irritation of nose, throat and airway.

**Ingestion**
May cause discomfort if swallowed. May cause stomach pain or vomiting.

**Skin contact**
Skin irritation.

**Eye contact**
Irritation of eyes and mucous membranes. Prolonged contact may cause redness and/or tearing.

**4.3. Indication of any immediate medical attention and special treatment needed**

**Notes for the doctor**
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**
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**

**Hazardous combustion products**
Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Toxic gases or vapours.

**5.3. Advice for firefighters**

**Special protective equipment for firefighters**
Use protective equipment appropriate for surrounding materials.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions**
Wear protective clothing as described in Section 8 of this safety data sheet. Avoid contact with eyes and prolonged skin contact.

**6.2. Environmental precautions**

**Environmental precautions**
Avoid discharge into drains or watercourses or onto the ground.

**6.3. Methods and material for containment and cleaning up**

**Methods for cleaning up**
Absorb in vermiculite, dry sand or earth and place into containers. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.
6.4. Reference to other sections

Reference to other sections
See Section 11 for additional information on health 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.

Advice on general occupational hygiene
Avoid contact with eyes and prolonged skin contact.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions
Store in a cool and well-ventilated place.

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

2-Aminoethanol
Long-term exposure limit (8-hour TWA): WEL 1 ppm 2.5 mg/m3
Short-term exposure limit (15-minute): WEL 3 ppm 7.6 mg/m3
Sk

Ethanol
Long-term exposure limit (8-hour TWA): WEL 1000 ppm 1920 mg/m3

Benzene
Long-term exposure limit (8-hour TWA): WEL 1 ppm 3.25 mg/m3
Carc, Sk

WEL = Workplace Exposure Limit
Sk = Can be absorbed through the skin.
Carc = Capable of causing cancer and/or heritable genetic damage.

8.2. Exposure controls

Eye/face protection
Wear chemical splash goggles.

Hand protection
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. 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.

Hygiene measures
No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance
Coloured liquid.

Colour
Green.
Formula 409® Antibacterial All-Purpose Cleaner - Lemon - US

Odour
Citrus. Floral.

Odour threshold
Not determined.

pH
pH (concentrated solution): 9 - 11.5

Melting point
Not relevant.

Initial boiling point and range
Not determined.

Flash point
> 93°C CC (Closed cup).

Evaporation rate
Not determined.

Evaporation factor
Not determined.

Flammability (solid, gas)
Not relevant.

Upper/lower flammability or explosive limits
Not relevant.

Vapour pressure
Not determined.

Vapour density
Not relevant.

Relative density
Not determined.

Bulk density
Not determined.

Partition coefficient
Not determined.

Auto-ignition temperature
Not relevant.

Decomposition Temperature
Not relevant.

Viscosity
Not determined.

Explosive properties
Not considered to be explosive.

Oxidising properties
The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.

9.2. Other information

Other information
No information required.

SECTION 10: Stability and reactivity

10.1. 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.

10.3. Possibility of hazardous reactions

Will not polymerise.

10.4. Conditions to avoid

Avoid excessive heat for prolonged periods of time.

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

None at ambient temperatures. Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral
Based on available data the classification criteria are not met.

ATE oral (mg/kg)
66,666.66666667

Acute toxicity - dermal
Based on available data the classification criteria are not met.

ATE dermal (mg/kg)
200000.0

Acute toxicity - inhalation
Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data
Dose: 0.5 ml, Rabbit, Skin Irrit. 2 - H315

Serious eye damage/irritation
Eye Irrit. 2 - H319 Dose: 0.1 ml, 1 second, Rabbit

Respiratory sensitisation
Based on available data the classification criteria are not met.

Skin sensitisation
Based on available data the classification criteria are not met.

Germ cell mutagenicity
Genotoxicity - in vitro
Based on available data the classification criteria are not met.

Genotoxicity - in vivo
Based on available data the classification criteria are not met.

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

Reproductive toxicity
Reproductive toxicity - fertility
Based on available data the classification criteria are not met.

Reproductive toxicity - development
Formula 409® Antibacterial All-Purpose Cleaner - Lemon - US

Based on available data the classification criteria are not met.

**Specific target organ toxicity - single exposure**
STOT - single exposure
Based on available data the classification criteria are not met.

**Specific target organ toxicity - repeated exposure**
STOT - repeated exposure
Based on available data the classification criteria are not met.

**Aspiration hazard**
Not anticipated to present an aspiration hazard, based on chemical structure.

**Toxicological information on ingredients.**

### 2-Aminoethanol

**Acute toxicity - oral**
Acute toxicity oral (LD50 mg/kg)
1,515.0

**Species**
Rat

REACH dossier information.

**ATE oral (mg/kg)**
1,515.0

**Acute toxicity - dermal**
 Converted acute toxicity point estimate (cATpE)

**ATE dermal (mg/kg)**
1100

**Acute toxicity - inhalation**
 Converted acute toxicity point estimate (cATpE)

**ATE inhalation (vapours mg/l)**
11.0

**Skin corrosion/irritation**
Animal data
Dose: 0.5 ml, 4 hours, Rabbit REACH dossier information. Skin Corr. 1B - H314 Causes severe skin burns and eye damage.

**Serious eye damage/irritation**
REACH dossier information. Corrosive to skin. Corrosivity to eyes is assumed.

**Skin sensitisation**
Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier information.

**Germ cell mutagenicity**

**Genotoxicity - in vitro**
Chromosome aberration: Negative. REACH dossier information.

**Genotoxicity - in vivo**
Chromosome aberration: Negative. REACH dossier information.

**Reproductive toxicity**

**Reproductive toxicity - fertility**
Two-generation study - NOAEL 300 mg/kg/day, Oral, Rat P REACH dossier information.

**Reproductive toxicity - development**
Maternal toxicity: - NOAEL: 120 mg/kg/day, Oral, Rat REACH dossier information.
Formula 409® Antibacterial All-Purpose Cleaner - Lemon - US

Quaternary ammonium compounds, benzyl-C12-16-alkyl(dimethyl, chlorides

Acute toxicity - oral
ATE oral (mg/kg)
100.0

Acute toxicity - dermal
ATE dermal (mg/kg)
300.0

Ethanol

Acute toxicity - oral
Acute toxicity oral (LD50 mg/kg)
10,470.0

Species
Rat

REACH dossier information.

ATE oral (mg/kg)
10,470.0

Acute toxicity - inhalation
Acute toxicity inhalation (LC50 vapours mg/l)
116.9

Species
Rat

REACH dossier information.

ATE inhalation (vapours mg/l)
116.9

Skin corrosion/irritation

Animal data
Dose: 0.2 ml, 24 hours, Rabbit Primary dermal irritation index: 0 REACH dossier information. Not irritating.

Serious eye damage/irritation
Not irritating.

Germ cell mutagenicity

Genotoxicity - in vitro
Gene mutation: Negative. REACH dossier information.

Genotoxicity - in vivo
Chromosome aberration: Negative. REACH dossier information.

Reproductive toxicity

Reproductive toxicity - fertility
Two-generation study - NOAEL 15 %, Oral, Mouse P Two-generation study - NOAEL 10 %, Oral, Mouse F1 REACH dossier information.

Reproductive toxicity - development
Maternal toxicity: - NOAEL: 16000 ppm, Inhalation, Rat REACH dossier information.

SECTION 12: Ecological Information

12.1. Toxicity
Not considered toxic to fish.
Formula 409® Antibacterial All-Purpose Cleaner - Lemon - US

Ecological information on ingredients.

2-Aminoethanol

Acute toxicity - fish
LC₅₀, 96 hours: 349 mg/l, Cyprinus carpio (Common carp) REACH dossier information.

Acute toxicity - aquatic invertebrates
EC₅₀, 48 hours: 65 mg/l, Daphnia magna REACH dossier information.

Acute toxicity - aquatic plants
NOEC, 72 hours: 1 mg/l, Pseudokirchneriella subcapitata EC₅₀, 72 hours: 2.8 mg/l, Pseudokirchneriella subcapitata REACH dossier information.

Chronic toxicity - fish early life stage
NOEC, 41 days: 1.24 mg/l, Oryzias latipes (Red killifish) REACH dossier information.

Chronic toxicity - aquatic invertebrates
NOEC, 21 days: 0.85 mg/l, Daphnia magna EC₅₀, 21 days: 2.5 mg/l, Daphnia magna REACH dossier information.

Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides

Acute aquatic toxicity
LE(C)₅₀
0.001 < L(E)C50 ≤ 0.01

M factor (Acute)
100

Ethanol

Acute toxicity - fish
LC₅₀, 96 hours: 14200 mg/l, Pimephales promelas (Fat-head Minnow) LC₀, 96 hours: 7960 mg/l, Pimephales promelas (Fat-head Minnow) REACH dossier information.

Acute toxicity - aquatic invertebrates
LC₅₀, 48 hours: 5012 mg/l, Ceriodaphnia REACH dossier information.

Acute toxicity - aquatic plants
EC₅₀, 96 hours: 675 mg/l, Freshwater algae EC₅₀, 72 hours: 275 mg/l, Freshwater algae EC₁₀₀, 72 hours: 14200 mg/l, Freshwater algae REACH dossier information.

Chronic toxicity - aquatic invertebrates
NOEC, 9 days: 9.6 mg/l, Daphnia magna REACH dossier information.

12.2. Persistence and degradability

Persistence and degradability
The surfactant(s) contained in this product complies with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them at their direct request, or at the request of a detergent manufacturer.

Ecological information on ingredients.

2-Aminoethanol

Biodegradation
Water - Degradation (>90%): 21 days REACH dossier information. The substance is readily biodegradable.

Ethanol

Biodegradation
Water - Degradation (~74%): 5 days Water - Degradation (~95%): 15 days Water - Degradation (~84%): 20 days REACH dossier information. The substance is readily biodegradable.

Chemical oxygen demand
1.99 g O₂/g substance REACH dossier information.

12.3. Bioaccumulative potential
Formula 409® Antibacterial All-Purpose Cleaner - Lemon - US

No data available on bioaccumulation.

**Partition coefficient**
Not determined.

**Ecological information on ingredients.**

2-Aminoethanol

**Partition coefficient**
log Pow: -2.3 REACH dossier information.

Ethanol

**Partition coefficient**
log Pow: -0.35 REACH dossier information.

12.4. **Mobility in soil**

**Mobility**
The product is soluble in water.

**Ecological information on ingredients.**

2-Aminoethanol

**Henry's law constant**
0.000000118 Pa m3/mol @ 25°C REACH dossier information.

Ethanol

**Surface tension**
24.5 mN/m @ 20°C REACH dossier information.

12.5. **Results of PBT and vPvB assessment**

This product does not contain any substances classified as PBT or vPvB.

12.6. **Other adverse effects**

Not relevant.

**SECTION 13: Disposal considerations**

13.1. **Waste treatment methods**

**General information**
Dispose of waste product or used containers in accordance with local regulations

**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
14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations
EH40/2005 Workplace exposure limits.

EU legislation

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
Eye Irrit. 2 - H319, Skin Irrit. 2 - H315: Calculation method.

Revision comments
Classification according to CLP Annex I.

Revision date 14/05/2014
Revision 2
Supersedes date 01/09/2012
SDS number 157

Risk phrases in full
R11 Highly flammable.
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R24/25 Toxic in contact with skin and if swallowed.
R34 Causes burns.
R36/38 Irritating to eyes and skin.
R50 Very toxic to aquatic organisms.

Hazard statements in full
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
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