



Published on: 01/12/2010  
Reviewed on: 01/10/2022

## E-Muls O

### TECHNICAL DATA SHEET

#### DESCRIPTION

**E-Muls O** Orange Oil & d-Limonene Emulsifier System. Facilitates easy formulation of clear liquid micro-emulsions.

- Safe & simple to use.
- All in One Detergent and Emulsifier system.
- Safe and environmentally acceptable.
- Produces powerful de-greaser systems at near neutral pH.
- Does not contain Formaldehyde.

#### FORMULATION/COMPOSITION

**E-Muls O** is a revolutionary surfactant system designed to facilitate the simple formulation of water-based d-Limonene or Orange Oil fluid micro-emulsions (Oil in Water) of exceptional clarity and stability. Due to the sensitive nature surrounding the formation of clear and stable micro-emulsions **E-Muls O** is intended to be used as the single and only surfactant in the finished product. Solvent based micro-emulsions are amongst the most powerful and effective cleaning and de-greasing systems and as such there is no need nor point in attempting to add any further components to your finished product - attempting to do so will usually result in a de-stabilisation and consequential loss of performance of the finished emulsion!

Note: Although naturally derived, Orange Oil & d-Limonene are common Allergens, many people are sensitive to contact and will mostly present with a reddening of the skin along with an associated burning sensation. Effects are usually not severe or harmful.

#### PHYSICAL & CHEMICAL PROPERTIES

<b>Appearance</b>	Amber, transparent fluid
<b>Active Ingredients</b>	Anionic & Nonionic Surfactants & Solvent
<b>Active content</b>	100%
<b>Odour</b>	Amine
<b>Molar Mass (calculated from hydroxyl number) g/mol</b>	1360g/mol
<b>pH (as manufactured)</b>	9.0 - 10.0
<b>S.G. (at 20°C)</b>	0.98 - 0.99 g/ml
<b>Stability in formulation</b>	Stable at pH 7.5 - 11.0

#### MANUFACTURER/SUPPLIER

Ecwamix Chemical Systems (Pty) Ltd  
3 Granville Avenue Lea Glen Roodepoort, Gauteng South Africa

**Information**  
Tel: (o/h) +27 011 472 2256 Fax: +27 011 472 2121  
E-mail: ecwamix@netactive.co.za

**Emergency contact:**  
Office hours: 011 472 2256



#### SAFETY & HANDLING

Always consult the Material Safety Data Sheet before Use



Published on: 01/12/2010  
Reviewed on: 01/10/2022

## E-Muls O

### TECHNICAL DATA SHEET

#### Shelf Life as supplied

At least 1 year at ambient conditions

This data does not constitute a specification - please see current "Certificate of Analysis". For further data please also request a copy of the MSDS (Material Safety Data Sheet)

### PROPERTIES / USE

**E-Muls O** is simply blended to the Oil phase (Orange Oil or d-Limonene) at a ratio of 1.5 to1 (that is 1.5 parts of **E-Muls O** to 1 part of Oil, e.g.- 15kg **E-Muls O** mixed with 10kg Orange Oil). After blending the two products together until a homogenous blend occurs, this oil phase can simply be added to the water phase, under continuous and thorough stirring, until a clear and uniform product results. Total active content of your formula is simply determined by the actual amount of Oil phase added to the water phase - calculated as a percentage; Orange Oil/d-Limonene content is then simply calculated as 40% of the total Oil phase.

Properties:

**up to 25% active (1-10% Orange Oil)** Thin liquid

**25 - 40% active (10-16% Orange Oil)** Viscous

**40 - 60% active (16-24% Orange Oil)** Gel

### BLENDING INSTRUCTIONS

The **EASY** way to Produce Transparent, Liquid Micro-Emulsion Environmentally-Safe Cleaning Products & Degreasers:

**STEP 1:** In Tank A, blend 1 Part Orange Oil /d-Limonene with 1.5 Parts **E-Muls O**: (OIL PHASE)

**STEP 2:** In Tank B, add the Water portion (including preservative, chelates, etc.), and Stir until fully Dissolved. (WATER PHASE)

**STEP 3:** Now add the Blend in Tank A (OIL PHASE) to the Water (Tank B), with moderate to fast stirring. Once fully dissolved, a Clear Emulsion is formed.

**THUS:** BLEND 1 PART to 1.5 PARTS Ratio of any amount of Orange Oil / d-Limonene to **E-Muls O**, for example:

**ORANGE OIL / d-LIMONENE : (1 PART) x E-Muls O (1.5 PARTS) + WATER = FINISHED PRODUCT**

#### DISCLAIMER / NON-WARRANTY

This product has been subjected to limited tests and has been shown to perform well. The information contained herein is to our best knowledge true and accurate, but since the conditions of use are beyond our control, Ecwamix Chemical Systems cc. disclaims any liability in connection with the use of this product and/or information. Warranty extends only as far as to the replacement of material shipped if not compliant with the specification as set out in the attached "Certificate of Analysis" and within the expiry period of the said product. All recommendations or suggestions are made without guarantee. It is good practice to conduct one's own application tests on a small area prior to using the product.



#### SAFETY & HANDLING

Always consult the Material Safety Data Sheet before Use



Published on: 01/12/2010  
Reviewed on: 01/10/2022

## E-Muls O

### TECHNICAL DATA SHEET

ORANGE OIL / d-LIMONENE: (1 PART) x	E-Muls O (1.5 PARTS) +	WATER	FINISHED PRODUCT =
2%	3%	95%	Fluid
3%	4.5%	92.5%	Fluid
5%	7.5%	87.5%	Fluid
7%	10.5%	82.5%	Fluid
10%	15%	75%	Fluid
15%	22.5%	62.5%	Thicker Liquid
20%	30%	50%	Gel

**NOTE: It is recommended that one should add to the Water Phase (Tank B):**

1. **Preservative - EcwaCide IT** : A formaldehyde-free alternative @ 0.1%.
2. **Tetrasodium EDTA** @ 0.1% will help to prevent any future discolouration of your product due to Iron content in the water.

## PACKAGING

E-Muls O is available in

- 25 Kg HDPE blowpack
- 200 Kg HDPE blowpack
- 1000 Kg IBC (Flowbin)

### DISCLAIMER / NON-WARRANTY

This product has been subjected to limited tests and has been shown to perform well. The information contained herein is to our best knowledge true and accurate, but since the conditions of use are beyond our control, Ecwamix Chemical Systems cc. disclaims any liability in connection with the use of this product and/or information. Warranty extends only as far as to the replacement of material shipped if not compliant with the specification as set out in the attached "Certificate of Analysis" and within the expiry period of the said product. All recommendations or suggestions are made without guarantee. It is good practice to conduct one's own application tests on a small area prior to using the product.



**SAFETY & HANDLING**  
Always consult the Material Safety Data Sheet before Use



Published on: 01/12/2010  
Reviewed on: 01/10/2022

## E-Muls O

### TECHNICAL DATA SHEET

#### GUIDELINE FORMULATIONS

All formulations on this page are simply blended together, in the order given, until uniformity and clarity are attained.

(Blend A) d-Limonene Concentrate			(Blend B) Orange Oil Concentrate		
Order	Product	% Use	Order	Product	% Use
1	<b>E-Muls O</b>	60.0%	1	<b>E-Muls O</b>	60.0%
2	d-Limonene	40.0%	2	Orange Oil	40.0%
		100%			100%

The above formulations create a blend that is infinitely soluble in water. It can either be sold as a water dilutable concentrate, or used as stock solution for the production of many differing varieties of water-based d-Limonene/Orange Oil cleaners and degreasers - as per the examples below:

2% d-Limonene Cleaner (5% Total Activity)			4% Orange Oil Cleaner (10% Total Activity)		
Order	Product	% Use	Order	Product	% Use
1	Water	94.9%	1	Water	89.9%
2	Preservative	0.1%	2	Preservative	0.1%
3	Blend A	5.0%	3	Blend B	10.0%
		100%			100%

#### DISCLAIMER / NON-WARRANTY

This product has been subjected to limited tests and has been shown to perform well. The information contained herein is to our best knowledge true and accurate, but since the conditions of use are beyond our control, Ecwamix Chemical Systems cc. disclaims any liability in connection with the use of this product and/or information. Warranty extends only as far as to the replacement of material shipped if not compliant with the specification as set out in the attached "Certificate of Analysis" and within the expiry period of the said product. All recommendations or suggestions are made without guarantee. It is good practice to conduct one's own application tests on a small area prior to using the product.



#### SAFETY & HANDLING

Always consult the Material Safety Data Sheet before Use



Published on: 01/12/2010  
Reviewed on: 01/10/2022

## E-Muls O

### TECHNICAL DATA SHEET

#### GUIDLEINE FORMULATIONS

5% d-Limonene Cleaner		
(12.5% Total Activity)		
Order	Product	% Use
1	Water	87.4%
2	Preservative	0.1%
3	Blend A	12.5%
		100%

8% Orange Oil Cleaner		
(20% Total Activity)		
Order	Product	% Use
1	Water	79.9%
2	Preservative	0.1%
3	Blend B	20.0%
		100%

10% d-Limonene Cleaner		
(25% Total Activity)		
Order	Product	% Use
1	Water	74.9%
2	Preservative	0.1%
3	Blend A	25.0%
		100%

12% Orange Oil Cleaner		
(30% Total Activity)		
Order	Product	% Use
1	Water	69.9%
2	Preservative	0.1%
3	Blend B	30.0%
		100%

#### DISCLAIMER / NON-WARRANTY

This product has been subjected to limited tests and has been shown to perform well. The information contained herein is to our best knowledge true and accurate, but since the conditions of use are beyond our control, Ecwamix Chemical Systems cc. disclaims any liability in connection with the use of this product and/or information. Warranty extends only as far as to the replacement of material shipped if not compliant with the specification as set out in the attached "Certificate of Analysis" and within the expiry period of the said product. All recommendations or suggestions are made without guarantee. It is good practice to conduct one's own application tests on a small area prior to using the product.



**SAFETY & HANDLING**  
Always consult the Material Safety Data Sheet before Use



Published on: 01/12/2010  
Reviewed on: 01/10/2022

## E-Muls O

### TECHNICAL DATA SHEET

#### GUIDLEINE FORMULATIONS

16% d-Limonene Cleaner		
(40% Total Activity)		
Order	Product	% Use
1	Water	59.9%
2	Preservative	0.1%
3	Blend A	40.0%
		100%

20% Orange Oil Cleaner		
(50% Total Activity)		
Order	Product	% Use
1	Water	49.9%
2	Preservative	0.1%
3	Blend B	50.0%
		100%

#### DISCLAIMER / NON-WARRANTY

This product has been subjected to limited tests and has been shown to perform well. The information contained herein is to our best knowledge true and accurate, but since the conditions of use are beyond our control, Ecwamix Chemical Systems cc. disclaims any liability in connection with the use of this product and/or information. Warranty extends only as far as to the replacement of material shipped if not compliant with the specification as set out in the attached "Certificate of Analysis" and within the expiry period of the said product. All recommendations or suggestions are made without guarantee. It is good practice to conduct one's own application tests on a small area prior to using the product.



#### SAFETY & HANDLING

Always consult the Material Safety Data Sheet before Use