

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade Name: ynvisible Electrolyte UV-CT

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

Relevant identified uses: Electrolyte used as an ionic conductive layer in electrochromic devices.

Uses advised against: Do not use for any other purpose.

**1.3. Details of the supplier of the safety data sheet**

YD Ynvisible, S.A.

Rua Quinta do Bom Retiro, 12C, 2820-690 Charneca de Caparica, Portugal

Telephone: +351 211 308 817

Email: [info@ynvisible.com](mailto:info@ynvisible.com)

Web: [www.ynvisible.com](http://www.ynvisible.com)

**1.4. Emergency telephone number**

Portugal: Centro de Informação Anti-Venenos: +351 808 250 250

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) no. 1272/2008 [CLP/GHS]:

Skin Irritant Category 2, H315

Eye Irritant Category 2, H319

Specific Target Organ Toxicant, Single Exposure Category 3, H335

For abbreviations, refer to Section 16.

**2.2. Label elements**

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]:

Hazard Pictogram:



Signal Word:

Warning

Hazard Statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H413 May cause long lasting harmful effects to aquatic life.

Precautionary Statements:

General:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

Prevention:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

**Disposal:**

P501 Dispose of contents/container in accordance with local regulations.

**2.3. Other hazards**

This mixture contains an oxidizing solid (at 3-10%). Testing has not been performed on the mixture, thus it is not possible to classify it with respect to oxidizing potential. However, it is recommended that the mixture is kept/stored away from combustible material.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures**

Description of the mixture:

Electrolyte used as an ionic conductive layer in electrochromic devices.

Hazardous ingredients:

Confidentiality Code	Function or Chemical Name	EC-No.	Index No.	Concentration range (% by wt.)	CLP (Reg. 1272/2008) Classification *
Substance 5	Solvent / plasticizer	-	-	50 - 75%	Eye Irrit. 2 H319
Substance 2	Solvent / plasticizer	-	-	20 - 30%	Skin Irrit. 2 H315 Eye Irrit. 2 H319 STOT SE 3 H335
Substance 4	Lithium perchlorate	232-237-2	-	3 - 10%	Ox. Sol. 2 H272 Skin Irrit. 2 H315 Eye Irrit. 2 H319 STOT SE 3 H335
Other ingredients	-	-	-	to 100%	-

Ingredients in the mixture at or above the concentration limits (%) listed in Table 1.1 of Regulation (EC) 1272/2008:

Confidentiality Code	Function	EC-No.	Index No.	Concentration range (% by wt.)	CLP (Reg. 1272/2008) Classification *
Substance 3	UV-curing promoter	-	-	0,1 - <1%	Skin Sens. 1 H317 Aquatic Chronic 4 H413

\* Classification as per substance Safety Data Sheets.

For full text of H statements and abbreviations, see Section 16.

**SECTION 4: First aid measures****4.1. Description of first aid measures**

General notes:

Consult a physician. Show this safety data sheet to the doctor in attendance

Following inhalation:

Remove to fresh air and keep at rest in half-upright position. Seek medical attention if symptoms arise.

Following skin contact:

Remove all contaminated clothing. Wash skin with soap and rinse with plenty of water. Seek medical attention if irritation arises. Wash clothes before re-use.

Following eye contact:

Immediately rinse with water. Holding eyes open, continue rinsing for 15 minutes at least. Remove contact lenses as soon as possible. Seek medical attention if irritation arises.

**Following ingestion:**

If swallowed, DO NOT INDUCE VOMITING: seek medical advice immediately and show the product label or this SDS. Remove any residues from mouth and rinse it with plenty of water. Offer the casualty 1 or 2 glasses of water to drink. Never give anything by mouth to an unconscious person.

**Self-protection of first aider:**

Personal protective equipment for first aid responders is recommended according to potential for exposure (refer to Section 8).

**Notes for the doctor:**

No specific antidote. Treat symptomatically (decontamination, vital functions). Call a Poison Centre immediately for treatment advice. Before emptying the stomach, assess the potential danger arising from lung aspiration against the product toxicity.

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

May cause respiratory irritation.

**Following skin contact:**

May cause irritation.

**Following eye contact:**

May cause irritation. No delayed effects expected.

**Following ingestion:**

May cause nausea, headache, vomiting and central nervous system depression. Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhoea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion.

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

No need to provide any special means/medicinal products for immediate treatment at the workplace, no specific antidote available.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable extinguishing media:**

Solid water jet.

**5.2. Special hazards arising from the substance or mixture****Hazardous combustion products:**

May include and are not limited to hydrogen chloride gas, lithium oxides, carbon oxides and oxides of phosphorus.

**5.3. Advice for firefighters**

Clothing conforming to EN469 should be sufficient to deal with fires involving the mixture.

However, a Self-Contained Breathing Apparatus (SCBA) may be required if there is a potential for exposure to combustion fumes.

**5.4. Additional information**

Provide storage and work areas with suitable fire extinguishers.

Call the Fire Brigade at once to deal with all fires involving chemicals unless the fire is small and immediately controllable. Spray unopened containers with a mist spray to keep cool. If without risk, remove intact containers from exposure to fire. Contain fire-fighting water, bunding if necessary with sand or earth. Do not allow contamination of public drains or surface or ground waters. Dispose of fire debris and contaminated water by containing and soaking up the spillage with inert and adsorbent material before disposing of safely and legally, for example through a licensed waste disposal contractor.

## SECTION 6: Accidental release measures

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

For non-emergency personnel

Protective equipment:

Remove immediately any contaminated clothing. Wear prescribed personal protective equipment to prevent contact with eyes and skin. A Self-Contained Breathing Apparatus (SCBA) may be required if there is an elevated risk for exposure.

Emergency procedures:

Call the emergency services if the release is not immediately controllable. If the release is localized and immediately controllable, provide sufficient ventilation and control the release at its source.

For emergency responders

Clothing conforming to EN469.

### 6.2. Environmental precautions

Use appropriate containment to avoid environmental contamination. Control the release at its source. Contain the spill to prevent it from spreading, contaminating soil or entering sewage and drainage systems or any body of water. Inform the local water company if the release enters drains.

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

For containment:

Clean up spills immediately and place in a compatible disposal container. Contain spill by diking with earth, sand or absorbent material and place into a compatible marked disposal container.

For cleaning up:

Scrub area with a hard water detergent. Soak up wash liquid with additional absorbent material and place into a compatible marked disposal container. Seal container and arrange for disposal.

### 6.4. Reference to other sections

Refer to Section 8 for personal protective equipment and to Section 13 for disposal instructions.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all contact by mouth, with eyes and skin. Avoid inhalation of mist or vapour. Wear personal protective equipment as specified in Section 8. Provide suitable ventilation in the areas where the product is stored and used.

### 7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry, cool, and well-ventilated place. Keep away from any source of ignition.

### 7.3. Specific end use(s)

Electrolyte used as an ionic conductive layer in electrochromic devices.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Occupational Exposure limit values:

	Limit value - 8h		Limit value - Short term	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Solvent / plasticizer (Substance 5)	-	2 *	-	-

\* Value for Latvia.

## 8.2. Exposure controls

Appropriate engineering controls:

Engineering controls and appropriate work processes must be used to eliminate or reduce worker and environmental exposure in the areas where the substance is handled, transported, loaded, unloaded, stored and used. These measures must be adequate for the extent of the actual risk. Provide adequate local exhaust ventilation.

Personal protection equipment:

Eye and face protection:

Avoid contact with eyes. If there is a significant potential for contact, wear suitable eye and face protection (EN 166).

Skin protection:

Hand protection:

Wear suitable protective gloves against chemicals (EN 374 part 1, 2, 3). Replace gloves if damaged and before exceeding the breakthrough time.

Body protection:

Avoid contact with skin. If there is a significant potential for contact, wear suitable coveralls (EN 13034, Type 6).

Other skin protection:

None specified.

Respiratory protection:

If a risk assessment shows that engineering controls do not provide adequate respiratory protection, wear particle filtering half mask (EN 149) or half mask connected to particle filter (EN 140 + 143).

Environmental exposure controls:

Implement all applicable local and community environmental protection legislation. Refer to Section 15. Use appropriate containment to avoid environmental contamination. Do not empty into drains. Do not contaminate water with the product or used container. Refer to Section 12 and 13.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

All the data contained in this section are derived from test data/information on the mixture.

a) Appearance: Colour:	Liquid* Colourless*
b) Odour:	Weak woody, sweet, mildly irritant odour*
c) Odour threshold:	Not determined
d) pH:	Not determined
e) Melting point/freezing point:	Not determined
f) Initial boiling point and boiling range:	Not determined
g) Flash point:	Not determined
h) Evaporation rate:	Not determined
i) Flammability (solid, gas):	Not applicable (liquid)
j) Upper/lower flammability or explosive limits:	Not determined
k) Vapour pressure:	Not determined
l) Vapour density:	Not determined
m) Density:	Not determined
n) Solubility(ies) Solubility (water):	Not determined Not determined
o) Partition coefficient: n-octanol/water:	Not applicable (mixture)
p) Auto-ignition temperature: Minimum Ignition Temperature: Minimum Ignition Energy:	Not determined Not determined Not determined
q) Decomposition temperature:	Not determined

r) Viscosity:	Not available
s) Explosive properties:	The individual components of the mixture do not have explosive properties.
t) Oxidising properties:	Mixture not tested

\* This information is not supported by test data.

## 9.2. Other information

Not available.

## SECTION 10: Stability and reactivity

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### 10.1. Reactivity

This formulation contains an oxidizing solid (at 3-10%). Testing has not been performed on the mixture. Since the mixture has not been tested it is not possible to classify the mixture with respect to oxidizing potential, however it is recommended that the mixture is kept/stored away from combustible material.

### 10.2. Chemical stability

No data available.

### 10.3. Possibility of hazardous reactions

This formulation contains an oxidizing solid (at 3-10%). Testing has not been performed on the mixture. Since the mixture has not been tested it is not possible to classify the mixture with respect to oxidizing potential, however it is recommended that the mixture is kept/stored away from combustible material.

### 10.4. Conditions to avoid

Do not store in proximity of sources of ignition and heat.

### 10.5. Incompatible materials

Store away from combustible material.

### 10.6. Hazardous decomposition products

No data available.

**SECTION 11: Toxicological information**

No test data are available for the mixture, the classification contained in this section is derived from information on the mixture components.

**11.1. Information on toxicological effects**

a) acute toxicity	LD50 oral, rat + LD50 dermal, rabbit + LC50 inhalation, rat - Not classified as hazardous on the basis of mixture component information.
b) skin corrosion/irritation	Mixture classified as a skin irritant on the basis of mixture component information.
c) serious eye damage/irritation	Mixture classified as an eye irritant on the basis of mixture component information.
d) respiratory or skin sensitisation	Mixture classified as respiratory irritant on the basis of mixture component information.
e) germ cell mutagenicity	Not classified as mutagenic on the basis of mixture component information.
f) carcinogenicity	Not classified as carcinogenic on the basis of mixture component information.
g) reproductive toxicity	Not classified as a reproductive toxicant on the basis of mixture component information.
h) STOT-single exposure	Category 3 - Respiratory system.
i) STOT-repeated exposure	Not classified based on available information.
j) aspiration hazard	No effects known.

Likely routes of exposure and related long and short-term symptoms and health effects:

Route of exposure	Short-term symptoms and effects	Long-term symptoms and effects
<b>Inhalation:</b> There is a low risk of exposure by inhalation.	Possible slight nasal irritation and discharge.	No evidence of long-term effects after prolonged or repeated exposure.
<b>Eye contact:</b> There is a low risk of exposure by eye contact.	May cause irritation.	No evidence of long-term effects after prolonged or repeated exposure.
<b>Skin contact:</b> There is a low risk of exposure by skin contact.	May cause irritation.	No evidence of long-term effects after prolonged or repeated exposure.
<b>Ingestion:</b> There is a low risk of exposure by ingestion.	May cause nausea, headache, vomiting, dizziness and dehydration. Large doses of lithium ion can cause kidney damage if sodium intake is limited. Weight loss, dermatological effects, and thyroid disturbances have also been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur.	Diarrhoea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion. There is no further information available in relation to the long-term symptoms and effects. Long-term symptoms and effects are expected to be similar to short-term symptoms and effects but of increasing severity over time.

**SECTION 12: Ecological information**

No test data are available for the mixture; the information contained in this section relates to the classification of the mixture or to information on the mixture components.

**12.1. Toxicity**

The mixture is not classified with respect to environmental toxicity.

**12.2. Persistence and degradability**

There are insufficient data available for the individual components to confirm.

**12.3. Bioaccumulative potential**

There are insufficient data available for the individual components to confirm.

**12.4. Mobility in soil**

There are insufficient data available for the individual components to confirm.

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

No PBT or vPvB assessments have been carried out on the mixture.

**12.6. Other adverse effects**

Not determined.

## SECTION 13: Disposal considerations

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### 13.1. Waste treatment methods

Disposal of waste product contaminated packaging materials and any excess product should be in accordance with applicable local or national legislation.

For the handling and management of accidental release, follow the information given under Section 6 and 7.

## SECTION 14: Transport information

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Land transport ADR/RID, Maritime transport IMDG and Air transport ICAO-TI & IATA-DGR.

There are insufficient data to classify the mixture (please see Section 2.3).

## SECTION 15: Regulatory information

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

EU Regulations:

- Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.
- DIRECTIVE 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.
- 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
- 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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
- COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

National Regulations/legislation:

- Germany:
  - Gesetz zum Schutz vor gefährlichen Stoffen (Chemikaliengesetz-ChemG). 16 September 1980 (as amended).
  - Verwaltungsvorschrift wassergefährdende Stoffe (VwVwS) vom 17 May 1999
- Portugal:
  - Decreto-Lei n.º 220/2012, de 10 de outubro, que assegura a execução na ordem jurídica interna das obrigações decorrentes do Regulamento (CE) n.º 1272/2008, do Parlamento Europeu e do Conselho, de 16 de dezembro, relativo à classificação, rotulagem e embalagem de substâncias e misturas, que altera e revoga as Diretivas n.ºs 67/548/CEE e 1999/45/CE e altera o Regulamento (CE) n.º 1907/2006 (DR n.º 196 de 10/10/2012)

### 15.2. Chemical safety assessment

A Chemical Safety Assessment under Regulation (EC) 1907/2006 has not been performed for the mixture.



**SECTION 16: Other information****a) Indication of changes:**

This is the 2nd version of this safety data sheet issued in accordance with Commission Regulation (EC) 453/2010 (REACH regulation for safety data sheets) and Regulation EC 1272/2008 (CLP regulation) and amending Regulation (EC) No. 2015/830.

**b) Abbreviations and acronyms:**

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP	Classification Labelling Packaging Regulation, Regulation (EC) No 1272/2008
EC	European Community
GHS	Globally Harmonized System
Eye Irrit.	Serious eye irritation
LC50	Lethal Concentration to 50 % of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
Ox. Sol.	Oxidising solid
PBT	Persistent, Bioaccumulative and Toxic substance
REACH	Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitization
STOT RE	Specific target organ toxicity - repeated exposure
vPvB	Very Persistent and Very Bioaccumulative

**c) Key literature references and sources for data:**

Individual component safety data sheets.

ECHA Guidance on the compilation of safety data sheets (Version 1.1, December 2011).

Regulation (EC) No. 2015/830 on the compilation of safety data sheets.

**d) Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]**

Classification derived on the basis of mixture components.

**e) Relevant R-phrases, H-statements and precautionary statements not written out in full under Sections 2 to 15:**

H272 May intensify fire; oxidizer.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H413 May cause long lasting harmful effects to aquatic life.

**f) Training advice:**

General occupational hygiene training recommended.

**g) Further information:**

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