

MATERIAL SAFETY DATA SHEET

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

1.1. Product identifier.

Product name **Cleaner CTS (Water Based)**

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

Intended Use **Water Based Cleaning Solution for Pigment Inkjet Ink**

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

Name: **S. Roque – Máquinas e Tecnologia Laser, S.A.**
Rua das Ribes 400, Oliveira S. Mateus
 Full Address: **4765-774 Oliveira S. Mateus**
Vila Nova de Famalicão
Portugal
 Email: **geral@rooqdigital.com**
 Telephone: **+351 252980500**

SECTION 2. Hazards identification.

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Classification	Category	Exposure route
STOT Rep. Exp.	2	Oral
Acute Tox.	4	-

Other adverse physico-chemical, human health and environmental effects
None

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Hazard pictogram:



Hazard statements: **Warning**
 H302: Harmful if swallowed
 H373: May cause damage to organs through prolonged or repeated exposure

Prevention: P261: Avoid breathing mist/vapors/spray
 P280: Wear protective gloves/ protective clothing/ protective eye and face protection

Response: P302+P350: IF ON SKIN: Wash with plenty of soap and water
 P305+P351+P338 IF IN EYES: Rinse immediately 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.

2.3. Other hazards

No reliable data available.

SECTION 3. Composition/information on ingredients.

3.1. Substances

Not applicable

3.2. Mixtures

Name	CAS N.º	EC N.º	Index N.º	REACH Registration N.º	% wt/wt	Classification according to (EC) No1272/2008 (CLP)
Ethylene Glycol	107-21-1	203-473-3	603-027-00-1	01-2119456816-28-0128	<25%	Acute Tox4; H302 STOT Rep. Exp. 2 H373

Note: Undisclosed components are Not classified or Water.

SECTION 4. First aid measures

4.1. Description of first aid measures

General Advice: Remove contaminated clothing.
P260: Do not breathe fume/gas/mist/vapours/spray.

If Inhaled: Keep patient calm, remove to fresh air, seek medical attention.

On Skin contact: Wash thoroughly with soap and water
P302+ P352: Wash with plenty of soap and water

On contact with eyes: Remove contact lenses, if present and easy to do. Wash affected eyes for at least 15 minutes under running water with eyelids held open. If eye irritation persists: Get medical advice / attention.

On ingestion: immediately rinse mouth and then drink 200-300 ml of water, seek medical attention

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell.

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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

Inhaled:

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Ingestion:

Ingestion is thought to produce harmful effects (as classified under EC Directives), the material causes damage to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident.

Skin Contact:

Since material may cause sensitization to skin, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Eye:

The material is thought to cause serious eye irritation.

Chronic:

May cause damage to organs through prolonged or repeated exposure: Affected organs: kidney; Route of exposure: Oral

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

P314: Get medical attention if you feel unwell

SECTION 5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: water spray, dry powder, alcohol-resistant foam, carbon dioxide

5.2. Special hazards arising from the substance or mixture

Product is non-flammable water based solution. Hazardous combustion products (gases/vapours) produced in fire can include carbon monoxide, carbon dioxide, nitrogen oxides, sulphur oxides, chlorides and Smoke

5.3. Advice for firefighters

Alert Fire Brigade and tell them location and nature of hazard.

Wear breathing apparatus plus protective gloves.
Prevent, by any means available, spillage from entering drains or water courses.
Use water delivered as a fine spray to control fire and cool adjacent area.
DO NOT approach containers suspected to be hot.
Cool fire exposed containers with water spray from a protected location.
If safe to do so, remove containers from path of fire.
Further information: Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

P281: Use personal protective equipment as required.

6.1.1. For non-emergency personnel

Avoid breathing mist/vapors/spray. Wear protective gloves/ protective clothing/ protective eye and face protection. Wash hands/ area of contact thoroughly after handling. Do not eat, drink, or smoke when using this product. Obtain special instructions before use. Use personal protective equipment as required.

6.1.2. For emergency responders

Wear breathing apparatus plus protective gloves and protective clothing. Remove ignition sources and provision of sufficient ventilation, evacuate the danger area and consult experts.

6.2. Environmental precautions

Avoid release to the environment. Dispose according to local or international regulations.

Do not empty into drains

6.3. Methods and material for containment and cleaning up

P264: Wash hands/ area of contact thoroughly after handling.

Methods for cleaning up or taking up: For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations. For large amounts: Pump off product. Correctly dispose of recovered product immediately.

6.4. Reference to other sections

See Section 8 & Section 13 of this MSDS.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Do not handle until all safety precautions have been read and understood. Wear protective gloves/ protective clothing/ protective eye and face protection. Wash hands/ area of contact thoroughly after handling. Avoid breathing mist/vapors/spray.

P270: Do not eat, drink, or smoke when using this product.

P273: Avoid release to the environment.

Handling: Protection against fire and explosion, Electrical devices must meet the specified temperature class.

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

Suitable materials for containers: High density polyethylene (HDPE), High-Purity Polymer, stainless steel

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

Protect from air. Protect from atmosphere humidity, Protect contents from the effects of light

Note: For the best performance of the inks for application it is advisable to store and transport between 18 deg C to 28 deg C

Check all containers are clearly labelled and free from leaks. Keep container tightly closed in the ventilated place. Store in dry place. Keep away from heat and direct sunlight.

Storage duration: 12 months from the date of manufacturing

P405: Store locked up

7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Substance	Form	TWA	STEL	Reference
Ethylene Glycol	Particulate	10 mg/m ³		EH40/2005 WELs (United Kingdom (UK), 8/2007). Absorbed through skin Same Same /ACGIH /OSHA
	Vapour	52 mg/m ³	104 mg/m ³	
	Vapour	20ppm	40ppm	

Ethylene Glycol

Derived effect levels

Long term exposure

DNEL	35 mg/m ³	Workers	skin irritation/corrosion
DNEL	106 mg/kg bw/day	Workers	repeated dose toxicity
DNEL	7 mg/m ³	General Population	skin irritation/corrosion
DNEL	53 mg/kg bw/day	General Population	repeated dose toxicity

Predicted effect concentrations

PNEC aqua (freshwater)	10 mg/L	Assessment Factor
PNEC aqua (marine water)	1 mg/L	Assessment Factor
PNEC aqua (intermitente releases)	10 mg/L	Assessment Factor
PNEC STP	199.5 mg/L	Assessment Factor
PNEC Sediment (freshwater)	37 mg/kg sediment dw	partition coefficient
PNEC Sediment (marine water)	3,7 mg/kg sediment dw	partition coefficient
PNEC soil	1,53 mg/kg soil dw	partition coefficient

8.2. Exposure controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

General Personal Protection: Safety goggles or face shield, chemical resistant gloves, protective clothing and apparatus.

Eye/ Face Protection: Wear safety glasses or full face shield if splashes are likely to occur. Approved to EU Standard EN166.

Respiratory protection: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Respirator with combination filter for vapour/particulate (EN 14387). The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

Hand Protection: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.

Application of a non-perfumed moisturizer is recommended.

Body protection: Wear suitable protective clothing. Protective shoes or boots. Long sleeved clothing.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Colour	Colorless
Odour	Mild Sweet
pH	7 – 9
Freezing point	Less than 0 deg C
Boiling point	More than 100 0C
Flash point:	
Evaporation rate:	Slower than ether
Flammability (solid, gas):	Not relevant as this product is liquid
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure:	No data available
Vapour density	No data available
Density g/cm³:	1.12
Water Solubility(ies):	Completely miscible
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Viscosity:	3-12cPs
Explosive properties:	Not explosive

Oxidising properties:

Not oxidising

9.2 Other information

Miscibility:	No data available
Fat Solubility:	No data available
Conductivity:	No data available
redox potential:	No data available
radical formation potential	No data available
photocatalytic properties	No data available

SECTION 10. Stability and reactivity

10.1. Reactivity

Stable under normal storage conditions. May react with strong oxidizing agents and incompatible materials.

10.2. Chemical stability

Product is considered stable during storage and transportation under normal condition.

10.3. Possibility of hazardous reactions

Stable under normal conditions. Hazardous reactions may occur if contact with incompatible material.

10.4. Conditions to avoid

Heat and direct sunlight, high temperature, ignition sources (sparks, flames, static), incompatible materials.

10.5. Incompatible Materials

Strong oxidisers & Strong Bases.

10.6. Hazardous decomposition products

Product is non-flammable water based solution. Hazardous combustion products (gases/vapours) produced in fire can include carbon monoxide, carbon dioxide, nitrogen oxides, sulphur oxides, chlorides and Smoke

SECTION 11. Toxicological information

11.1. Information on toxicological effects

(a) Acute Oral Toxicity

Data available for the mixture.

LD 50>2000 mg/kg , mice, Test method: OECD 203, Aeration.

Conclusion: No toxic symptoms were observed & none of the tested mice died during 96Hrs after the dose.

Component wise data

1. Ethylene glycol

LD50= 7712 mg/kg bw - 7d - Rat

Clinical signs

Depression, narcosis.

Gross pathology

Animals that died: kidney damage

(b) Acute Dermal Toxicity

No Data available for the mixture.

Component wise data

1. Ethylene glycol

LD50 > 3500 mg/kg bw - Mouse

(c) Acute Inhalation Toxicity

No Data available for the mixture.

Component wise data

1. Ethylene glycol

LC50 > 2.5 mg/L air - 6h - Rat

(d) Irritant/Corrosive

No Data available for the mixture.

Component wise data

1. Ethylene glycol
Not irritating

(e) Sensitising
No Data available for the mixture.

Component wise data

1. Ethylene glycol
Not sensitising

1. Ethylene glycol
In Vitro- Negative
In Vivo- Negative

(f) Carcinogenicity
No Data available for the mixture.

Component wise data

1. Ethylene glycol
The results of this study suggest that ingestion of EG at a dosage of 1000 mg/kg diet may have accelerated the appearance of lymphosarcomas in female mice. However, the incidence was equivocal. There was no evidence of an increase in any other tumor type.

(g) STOT- Repeated exposures
No data available for mixtures

Component wise data

1. Ethylene glycol
Oral- Increased mortality appeared in male animals receiving 1 and 4% in the diet but the mortality data for females were difficult to interpret. Calcification of the kidneys and oxalate-containing calculi were observed in males on the 0.5, 1 and 4% diets. Females receiving diets containing 1 and 4% showed calcification but oxalate-containing calculi were detectable only in the females on the 4% diet. One female rat in the group receiving 0.1% ethylene glycol developed a large magnesium phosphate stone which contained no demonstrable amount of oxalate. There was an increased water consumption and appearance of protein in the urine of males receiving the 1 and 4% diets and females on the 4% diet.
Dermal- No testicular damage that was definitely induced by the test substance was detected in any of the male dogs investigated.
LD50 dermal (dog): > 4000 mg/kg bw

(h) Reproductive Toxicity
No Data available for the mixture.
Component wise data

1. Ethylene glycol
Exposure to ethylene glycol resulted in a small but significant decrease in the number of litters per breeding pair, in the number of live pups per pair and in the live pup weight. A significant number of pups in the 1.0% dose group were born with distinct facial deformities. In the retained litters at this dose, the facial deformities were more obvious with age. These malformed animals also exhibited fused ribs and shortened nasal, parietal, and/or frontal bones of the skull. When pups from the high dose group were raised to adulthood (with continued exposure to ethylene glycol) and mated, they exhibited decreased mating and fertility indices relative to controls handled in the same manner, but there were no effects on litter size, pup weight or sex ratio. The authors deemed ethylene glycol a "weak reproductive toxicant, but a potential teratogen.

Component wise data

1. Ethylene glycol
No data available

SECTION 12. Ecological information

12.1. Toxicity

Data available for the mixture.
Fish toxicity : Group of 8 fish were exposed to the concentration of 11mg/lit, OECD 203
Conclusion: sample did not cause any death of 8 fishes exposed for 96Hrs.

Component wise data

1. Ethylene glycol

Short term fish

LC50 = 72860 mg/ - 96 h - Pimephales promelas

Long term fish

NOEC = 32000 mg/L - 7 d - Pimephales promelas

Toxicity to aquatic algae and cyanobacteria

other: TKG= > 10000 mg/L - 8 d - Scenedesmus quadricauda

12.2. Persistence and degradability

Abiotic Degradation: No data available for mixture

Physical- and photo-chemical elimination: No data available for mixture

Biodegradation: After the 28 day test, extent of biodegradation was 89% based on COD measurement. Test method: OECD 302B

Hence, not classified.

Component wise data

1. Ethylene glycol

Readily biodegradable

12.3. Bioaccumulative potential

Bioconcentration factor (BCF): No data available for mixture

Component wise data

1. Ethylene glycol

No data available

12.4. Mobility in soil

Distribution to environmental compartments: No data available for mixture

Adsorption/ Desorption: No data available for mixture

Component wise data

1. Ethylene glycol

log Koc= 0

12.5. Results of PBT and vPvB assessment

No data available for this mixture

Component wise data

1. Ethylene glycol

This substance is not PBT / vPvB

12.6. Other adverse effects

No data available.

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Where possible, arrange for product to be recycled. Dispose of via an authorised person/licensed waste disposal contractor in accordance with local regulations

European waste catalogue (EWC) Hazardous waste Yes.

Waste Code

08 03 03

15 01 02

Waste designation.

Waste from water-based ink

Plastic packaging (packaging)

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

Packaging Material

Disposal: This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not

puncture or incinerate container. Packed in HDPE bottles.

P501: Dispose of contents/container in accordance with local/regional/national/international regulation

SECTION 14. Transport information

Note: For the best performance of the inks for application it is advisable to store and transport between 18 deg C to 28 deg C

Land Transport (ADR / RID / GGVSE)

14.1 UN number	Not applicable	14.4 Packing group	Not applicable	
14.2 UN proper shipping name	Not applicable	14.5 Environmental hazard	No relevant data	
14.3 Transport hazard class(es)	Not applicable	14.6 Special precautions for user	Hazard identification (Kemler)	Not applicable

Air transport (ICAO-IATA / DGR)

14.1 UN number	Not applicable	14.4 Packing group	Not applicable	
14.2 UN proper shipping name	Not applicable	14.5 Environmental hazard	No relevant data	
14.3 Transport hazard class(es)	Not applicable	14.6 Special precautions for user	No data available	

Inland waterways transport (ADNR / River Rhine)

14.1 UN number	None			
14.2 UN proper shipping name	None			
14.3 Transport hazard class(es)	None			
14.4 Packing group	None			
14.5 Environmental hazard	None			
14.6 Special precautions for user	Classification code	None		
	Equipment	None		
	Fire cones	None		

Sea Transport (IMDG code-GGVSee)

14.1 UN number	None	14.4 Packing group	None	
14.2 UN proper shipping name	None	14.5 Environmental hazard	None	
14.3 Transport hazard class(es)	None	14.6 Special precautions for user	SEM Number	None

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

Not transported in quantities more than 25kg packages..

SECTION 15. Regulatory information

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

15.1.1. EU - Regulations

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC
Not regulated

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer
Not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending

Directive 79/117/EEC Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals
Not regulated

Substances of very high concern (SVHC)

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1\%$ (w/w).

Directive 2000/39/EC - indicative occupational exposure limit values

Ethylene glycol

15.2. Chemical safety assessment

CSA has been performed on Ethylene Glycol

SECTION 16. Other information

16.1 Key literature references and sources for data

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Category	Method of classifications
STOT Rep. Exp. Acute Tox.	2 4	Bridging Principle Bridging Principle

SDS Responsible: ANKIT MAHESHWARI
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LEGEND

ACGIH = American Conference of Governmental Industrial Hygienists
DNEL= Derived No-Effect Level
EC= European Commission
LC= Lethal Concentration
OSHA = Occupational Safety and Health Administration (U.S.A.)
PBT= Persistent bioaccumulative toxic
PNEC= Predicted No Effect Concentration
REACH= Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL = Short Term Exposure Limit
STOT= SPECIFIC TARGET ORGAN SYSTEMIC
TWA = Time-weighted Average
UN= United Nation
vPVB = very persistent very Bioaccumulative
WEL= Workplace Exposure Limits

SOURCE

- REACH registered chemicals, http://echa.europa.eu/chem_data_en.asp
- CLP details, <http://echa.europa.eu/clp-2015>
- Toxnet, <http://toxnet.nlm.nih.gov>

16.2 List of relevant hazard statements and risk phrases

Hazard statements:

H302: Harmful if swallowed
H373: May cause damage to organs through prolonged or repeated exposure

Precautionary statements:

P260: Do not breathe fume/gas/mist/vapours/spray.
P261: Avoid breathing mist/vapors/spray
P264: Wash hands/ area of contact thoroughly after handling.
P270: Do not eat, drink, or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ protective eye and face protection
P302+P350: IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338 IF IN EYES: Rinse immediately 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.
P302+ P352 : Wash with plenty of soap and water
P314: Get medical attention if you feel unwell.

P405: Store locked up.

P501: Dispose of contents/container in accordance with local/regional/national/international regulation..

16.3 Other

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EUCEN Standards:

EN 16 Personal eye – protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro – organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices.

Indicates changes in section/subsection in this version compared to previous version

Note for users:

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