

## Safety Data Sheet

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

#### 1.1. Product identifier

Product name OXIDAN TCA/SG  
INDEX number 613-031-00-5  
EC number 201-782-8  
CAS number 87-90-1

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

Intended use Sanitizer for swimming pool water, whitening agent, oxidizer, professional use

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

Name 3V Sigma S.p.a.  
Full address via Torquato Tasso 58  
District and Country 24121 Bergamo (Bg)  
Italia  
Tel. 0039 035 4165111  
Fax 0039 035 4165580

e-mail address of the competent person responsible for the Safety Data Sheet product.safety@3vsigma.com

Product distribution by 3V Sigma S.p.A.

#### 1.4. Emergency telephone number

For urgent inquiries refer to 0039 035 4165.111/.400/.500

### 2. Hazards identification.

Oxidizer. Contact with combustible material may cause fire.  
Harmful if swallowed. Irritating to eye, to respiratory system and, after prolonged exposure, also to skin.  
Fire risk in case of decomposition; nitrogen trichloride formation may cause an explosion (see sects. 7 and 10).  
Very toxic to aquatic organisms, it may cause long-term adverse effects in the aquatic environment.

#### 2.1. Classification of the substance or mixture.

The product is classified as hazardous pursuant to the provisions set forth in Directives 67/548/EEC and 1999/45/EC and/or EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

##### 2.1.1. Regulation 1272/2008 (CLP) and following amendments and adjustments.

Hazard classification and indication:

Acute Tox. 4 H302  
Ox. Sol. 2 H272  
EUH031  
Eye Irrit. 2 H319  
STOT SE 3 H335  
Aquatic Chronic 1 H410  
Aquatic Acute 1 H400

##### 2.1.2. Directive 67/548/EEC and following amendments and adjustments.

Danger Symbols: O-Xn-N

R phrases: 8-22-31-36/37-50/53

# 3V Sigma S.p.a.

## OXIDAN TCA/SG

Revision nr.2  
Dated 15/09/2011  
Printed on 05/09/2012  
Page n. 2 / 8

EN

The full wording of the Risk (R) and hazard (H) phrases is given in section 16 of the sheet.

### 2.2. Label elements.

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Pictograms:



Warning: Danger

Hazard indication:

**H302** Harmful if swallowed.  
**H272** May intensify fire; oxidiser.  
**EUH031** Contact with acids liberates toxic gas.  
**H319** Causes serious eye irritation.  
**H335** May cause respiratory irritation.  
**H410** Very toxic to aquatic life with long lasting effects.  
**EUH206** Warning! Do not use together with other products. May release dangerous gases (chlorine).

Caution recommendations:

**P210** Keep away from heat / sparks / open flames / hot surfaces. No smoking.  
**P264** Wash hands thoroughly after handling.  
**P280** Wear protective gloves / protective clothing / eye protection / face protection.  
**P301+P312** IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell.  
**P304+P340** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
**P370+P378** In case of fire: Use (see 5.1) . . for extinction.

Contains: TRICHLOROISOCYANURIC ACID

INDEX. 613-031-00-5

### 2.3. Other hazards.

Information not available.

## 3. Composition/information on ingredients.

### 3.1. Substances.

Contains:

Identification.	Conc. %.	Classification 67/548/EEC.	Classification 1272/2008 (CLP).
<b>TRICHLOROISOCYANURIC ACID</b>			
CAS. 87-90-1	100	R31, O R 8, Xn R22, Xi R36/37, N R50/53	Ox. Sol. 2 H272, Acute Tox. 4 H302, Eye Irrit. 2 H319, STOT SE 3 H335, Aquatic Acute 1 H400, Aquatic Chronic 1 H410, EUH031
EC. 201-782-8			
INDEX. 613-031-00-5			

T+ = Very Toxic(T+), T = Toxic(T), Xn = Harmful(Xn), C = Corrosive(C), Xi = Irritant(Xi), O = Oxidizing(O), E = Explosive(E), F+ = Extremely Flammable(F+), F = Highly Flammable(F), N = Dangerous for the Environment(N)

The full wording of the Risk (R) and hazard (H) phrases is given in section 16 of the sheet.

### 3.2. Mixtures.

Information not relevant.

## 4. First aid measures.

### 4.1. Description of first aid measures.

EYES: Irrigate copiously with clean, fresh water for at least 15 minutes. Seek medical advice.

SKIN: Wash immediately with plenty of water. Remove contaminated clothing. If irritation persists, seek medical attention. Wash contaminated clothing before using them again.

INHALATION: Remove to open air. If breathing is irregular, seek medical advice.

INGESTION: Obtain immediate medical attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person.

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

For symptoms and effects caused by the contained substances see chap. 11.

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

Follow doctor's orders.

**5. Firefighting measures.**

**5.1. Extinguishing media.**

SUITABLE EXTINGUISHING MEDIA

Use extinction equipment containing carbon dioxide, foam and chemical powders. For product leaks and spills that do not catch fire, nebulised water can be used to dispel flammable fumes and protect the individuals taking part in stemming the leak.

EXTINGUISHING MEDIA WHICH SHALL NOT BE USED FOR SAFETY REASONS

Do not use water.

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

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products (carbon oxide, toxic pyrolysis products, etc).

**5.3. Advice for firefighters.**

GENERAL INFORMATION

In the case of fire, use jets of water to cool the containers to prevent the risk of explosions (product decomposition and excess pressure) and the development of substances potentially hazardous for health. Always wear full fire prevention gear.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Hardhat with visor, fireproof clothing (fireproof jacket and trousers with straps around arms, legs and waist) work gloves (fireproof, cut proof and dielectric), self-respirator (self-protector).

**6. Accidental release measures.**

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

Eliminate sources of ignition (cigarettes, flames, sparks, etc.) from the area in which the leak occurred. If there are no contraindications, spray powder with water to prevent the formation of dust. Use breathing equipment if powders are released into the air. Block the leakage if there is no hazard. Do not handle damaged containers or leaked product before donning appropriate protective gear. Send away individuals who are not suitably equipped. For information on risks for the environmental and health, respiratory tract protection, ventilation and personal protection equipment, see the other sections of this sheet.

**6.2. Environmental precautions.**

The product must not penetrate the sewer system, surface water, ground water and neighbouring areas.

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

Use spark proof mechanical tools to collect the leaked product and place in a plastic container. If there are no contraindications, use jets of water to eliminate product residues. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

**6.4. Reference to other sections.**

Any information on personal protection and disposal is given in sections 8 and 13.

**7. Handling and storage.**

**7.1. Precautions for safe handling.**

Ensure that there is an adequate earthing system for the equipment and personnel.

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

Store only in the original container. Follow the instructions of the supplier. Store in a ventilated and dry place, far away from sources of ignition.

**7.3. Specific end use(s).**

Information not available.

## 8. Exposure controls/personal protection.

Limit values: TLV not established.

We suggest the Chlorine limits TLV/TWA = 0,5 ppm - TLV/STEL = 1 ppm (ACGIH).

### 8.1. Control parameters.

Information not available.

### 8.2. Exposure controls.

As the use of adequate technical equipment must always take priority over personal protection equipment, make sure that the workplace is well aired through effective local aspiration or bad air vent. If such operations do not make it possible to keep the concentration of the product below the permitted workplace exposure thresholds a suitable respiratory tract protection must be used. See product label for hazard details during use. Ask your chemical substance suppliers for advice when choosing personal protection equipment. Personal protection equipment must comply with the rules in force indicated below.

#### HAND PROTECTION

Protect hands with category I (ref. Directive 89/686/EEC and standard EN 374) work gloves, such as those in latex, PVC or equivalent. The following should be considered when choosing work glove material: degradation, breakage times and permeation. Work glove resistance to preparations should be checked before use, as it can be unpredictable. Gloves' limit depends on the duration of exposure.

#### EYE PROTECTION

Wear protective airtight goggles (ref. standard EN 166).

#### SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear (ref. Directive 89/686/CEE and standard EN 344). Wash body with soap and water after removing overalls.

#### RESPIRATORY PROTECTION

If the threshold value for one or more of the substances present in the preparation for daily exposure in the workplace or to a fraction established by the company's prevention and protection service is exceeded, wear an FFP3 (ref. standard EN 141) type half mask.

The use of breathing protection equipment, such as masks with organic vapour and dust/mist cartridges, is necessary in the absence of technical measures limiting worker exposure. The protection provided by masks is in any case limited.

If the substance in question is odourless or its olfactory threshold is higher than the relative exposure limit and in the event of an emergency, or when exposure levels are unknown or the concentration of oxygen in the workplace is less than 17% volume, wear self-contained, open-circuit compressed air breathing apparatus (ref. standard EN 137) or fresh air hose breathing apparatus for use with full face mask, half mask or mouthpiece (ref. standard EN 138).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

All appropriate action must be taken to ensure that the above substance or preparation (blend, solution, dispersion, etc.) does not come into contact, even by accident, with acids, by adopting suitable technological and/or organisational measures.

## 9. Physical and chemical properties.

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

Appearance	solid
Colour	white
Odour	pungent
Odour threshold.	Not available.
pH.	3 (1 % in H <sub>2</sub> O)
Melting or freezing point.	247 °C.
Boiling point.	Not applicable.
Distillation range.	Not available.
Flash point.	Not applicable.
Evaporation Rate	Not available.
Flammability of solids and gases	Not highly flammable
Lower inflammability limit.	Not available.
Upper inflammability limit.	Not available.
Lower explosive limit.	Not available.
Upper explosive limit.	Not available.
Vapour pressure.	< 0,002 Pa
Vapour density	Not available.
Specific gravity.	1,9 - 2,1 Kg/l
Solubility	soluble in water
Partition coefficient: n-octanol/water	0,94
Ignition temperature.	Not available.
Decomposition temperature.	Not available.
Viscosity	Not available.
Reactive Properties	Not available.

## 9.2. Other information.

Information not available.

## 10. Stability and reactivity.

### 10.1. Reactivity.

The product may react exothermically on contact with strong oxidizing agents or reducers, strong acids or bases.

This product is a strong oxidizer. Avoid contact with any organic or inorganic oxidizable material. Contact with organic matter may cause fire. By contacts with acids decomposition occurs with chlorine development. Especially, avoid contact with nitrogen containing compounds like ammonia, urea, amines or similar. Small quantities of water react with evolution of violently explosive nitrogen trichloride.

### 10.2. Chemical stability.

Excessively high temperatures can cause thermal decomposition.

High temperatures cause decomposition.

### 10.3. Possibility of hazardous reactions.

See paragraph 10.1.

### 10.4. Conditions to avoid.

Avoid heating the product.

Decomposition occurs if heated above 200°C. Decomposition is self-sustained with emission of toxic gases (chlorine and traces of phosgene) and heat.

### 10.5. Incompatible materials.

Oxidizing agents or reducers, strong acids or bases.

### 10.6. Hazardous decomposition products.

In the event of thermal decomposition or fire, vapours potentially dangerous to health may be released.

Chlorine, nitrogen trichloride, phosgene.

## 11. Toxicological information.

### ACUTE TOXICITY

LD50 (oral, rat) > 700 mg/kg bw

LD50 (dermal, rabbit) > 2000 mg/kg bw

LD50 (inhalation, rat) > 0.09 mg/l - < 0.29 mg/l

SKIN IRRITATION (rabbit): Irritant

EYE IRRITATION (rabbit): Irritant

SKIN SENSITIZATION (guinea pig): Not sensitizing

### SUB-ACUTE TOXICITY

Repeated dose toxicity sub-acute (oral): 114 mg/kg bw/d

Repeated dose toxicity sub-acute (dermal): 114 mg/kg bw/d

Repeated dose toxicity sub-acute (inhalation): 114 mg/kg bw/d - NAEC = 201 mg/m<sup>3</sup> (8h)

### CHRONIC TOXICITY

Repeated dose toxicity chronic (oral): NOAEL = 154 mg/kg/day

Repeated dose toxicity chronic (dermal): NOAEL = 154 mg/kg/day

Repeated dose toxicity chronic (inhalation): NOAEL = 154 mg/kg/day

### MUTAGENESIS/CARCINOGENESIS/REPRODUCTIVE TOXICITY

Adverse effects were not found in any of the conducted studies concerning mutagenesis or carcinogenesis. In addition in a two generation study and in two teratogenicity studies only parental toxicity was found at levels well above the chronic oral NOAEL.

### 11.1. Information on toxicological effects.

Acute effects: ingestion of this product is harmful. Even small amounts of product may cause serious health problems (stomach pain, nausea, sickness, diarrhoea). This product may slightly irritate mucosae, the upper respiratory tract, eyes, and skin. Exposure symptoms may include: sting, cough, asthma, laryngitis, respiratory disorders, headache, nausea and sickness.

This product generates toxic harmful gases upon contact with acids.

Inhalation: In the existing acute inhalation studies, the test materials were ground to form a respirable powder. Only a small percentage of the commercial biocidal product is respirable or inhalable. Therefore, the result from the inhalation study is not applicable for classification and labelling and due to the minimal potential for inhalation presented by the marketed active substance, the inhalation route is not determinant for hazard identification.

## 12. Ecological information.

This product is dangerous for the environment and highly toxic for aquatic organisms. In the long term, it may even have negative effects on aquatic environment.

### 12.1. Toxicity.

#### TRICHLOROISOCYANURIC ACID

LC50 (96h): 0,23 mg/l/96h *Lepomis macrochirus*

EC50 (48h): 0,17 mg/l/48h *Daphnia magna*

### 12.2. Persistence and degradability.

1,3,5-trichloro-and s-triazine-2,4,6(1H,3H,5H)-trione are unstable in the environment because the available chlorine is rapidly reduced.

Cyanuric acid (or its monosodium salt) is the degradation product. Cyanuric acid is readily biodegradable in a large range of natural conditions and mainly in anaerobic conditions or when O<sub>2</sub> concentration is low (1-3 ppm).

### 12.3. Bioaccumulative potential.

Log Kow = 0,94.

### 12.4. Mobility in soil.

ADSORPTION (soil/sewage sludge, OECD 121):

Adsorption coefficient: Koc ca. 51 (for cyanuric acid).

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

No appreciable bioaccumulation potential (log Ko/w < 1).

### 12.6. Other adverse effects.

No evidence.

## 13. Disposal considerations.

### 13.1. Waste treatment methods.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## 14. Transport information.

These goods must be transported by vehicles authorized to the carriage of dangerous goods according to the provisions set out in the current edition of the Code of International Carriage of Dangerous Goods by Road (ADR) and in all the applicable national regulations.

These goods must be packed in their original packagings or in packagings made of materials resistant to their content and not reacting dangerously with it. People loading and unloading dangerous goods must be trained on all the risks deriving from these substances and on all actions that must be taken in case of emergency situations.

**3V Sigma S.p.a.**  
**OXIDAN TCA/SG**

Revision nr.2  
Dated 15/09/2011  
Printed on 05/09/2012  
Page n. 7 / 8

EN

**Road and rail transport:**

ADR/RID Class: 5.1 UN: 2468  
Packing Group: II  
Label: 5.1  
Nr. Kemler: 50  
Limited Quantity: 1 kg  
Tunnel restriction code: (E)  
Proper Shipping Name: TRICHLOROISOCYANURIC ACID, DRY



**Carriage by sea (shipping):**

IMO Class: 5.1 UN: 2468  
Packing Group: II  
Label: 5.1  
EMS: F-A, S-Q  
Marine Pollutant: YES  
Proper Shipping Name: TRICHLOROISOCYANURIC ACID, DRY



**Transport by air:**

IATA: 5.1 UN: 2468  
Packing Group: II  
Label: 5.1  
Cargo:  
Packaging instructions: 562 Maximum quantity: 25 Kg  
Pass.:  
Packaging instructions: 558 Maximum quantity: 5 Kg  
Proper Shipping Name: TRICHLOROISOCYANURIC ACID, DRY



**15. Regulatory information.**

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

Seveso category. 3, 9i

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.  
None.

Substances in Candidate List (Art. 59 REACH).  
None.

Substances subject to authorisation (Annex XIV REACH).  
None.

Healthcare controls.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

**15.2. Chemical safety assessment.**

No chemical safety assessment has been processed for the mixture and the substances it contains.

The relative CSR has been prepared and the relative exposure scenario is available.

**16. Other information.**

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

**Ox. Sol. 2** Oxidising solid, category 2  
**Acute Tox. 4** Acute toxicity, category 4  
**Eye Irrit. 2** Eye irritation, category 2  
**STOT SE 3** Specific target organ toxicity - single exposure, category 3  
**Aquatic Acute 1** Hazardous to the aquatic environment, acute toxicity category 1  
**Aquatic Chronic 1** Hazardous to the aquatic environment, chronic toxicity category 1

**3V Sigma S.p.a.**  
**OXIDAN TCA/SG**

Revision nr.2  
Dated 15/09/2011  
Printed on 05/09/2012  
Page n. 8 / 8

EN

<b>H272</b>	May intensify fire; oxidiser.
<b>H302</b>	Harmful if swallowed.
<b>H319</b>	Causes serious eye irritation.
<b>H335</b>	May cause respiratory irritation.
<b>H400</b>	Very toxic to aquatic life.
<b>H410</b>	Very toxic to aquatic life with long lasting effects.
<b>EUH031</b>	Contact with acids liberates toxic gas.

Text of risk (R) phrases mentioned in section 2-3 of the sheet:

<b>R 8</b>	CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE.
<b>R22</b>	HARMFUL IF SWALLOWED.
<b>R31</b>	CONTACT WITH ACIDS LIBERATES TOXIC GAS.
<b>R36/37</b>	IRRITATING TO EYES AND RESPIRATORY SYSTEM.
<b>R50/53</b>	VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

**GENERAL BIBLIOGRAPHY**

1. Directive 1999/45/EC and following amendments
2. Directive 67/548/EEC and following amendments and adjustments
3. Regulation (EC) 1907/2006 (REACH) of the European Parliament
4. Regulation (EC) 1272/2008 (CLP) of the European Parliament
5. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
6. Regulation (EC) 453/2010 of the European Parliament
7. The Merck Index. - 10th Edition
8. Handling Chemical Safety
9. Niosh - Registry of Toxic Effects of Chemical Substances
10. INRS - Fiche Toxicologique (toxicological sheet)
11. Patty - Industrial Hygiene and Toxicology
12. N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition

**Note for users:**

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product .

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

**Changes to previous review:**

The following sections were modified:

01 / 02 / 08 / 13 / 15.