# SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 453/2010)

## SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**1.1. Product identifier**

Product name : SURFANIOS
Product code : 350000

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

Cleaning and disinfection of floors, surfaces and equipment
For further information on product indication, please see the label.

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

Registered company name : Laboratoires ANIOS.
Address : PAVE DU MOULIN .59260.LILLE - HELLEMMES.FRANCE.
Telephone : + 33 (0)3 20 67 67 67. Fax : + 33 (0)3 20 67 67 68.
e:mail : fds@anios.com
www.anios.com

**1.4. Emergency telephone number : + 33(0)1 45 42 59 59.**

Association/Organisation : INRS.

## SECTION 2 : HAZARDS IDENTIFICATION

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

**In compliance with EC regulation No. 1272/2008 and its amendments.**

Substance that is corrosive to metals, Category 1 (Met. Corr. 1, H290).
Acute oral toxicity, Category 4 (Acute Tox. 4, H302).
Skin irritation, Category 2 (Skin Irrit. 2, H315).
Serious eye damage, Category 1 (Eye Dam. 1, H318).
Hazardous to the aquatic environment - Acute hazard, Category 1 (Aquatic Acute 1, H400).
Hazardous to the aquatic environment - Chronic hazard, Category 2 (Aquatic Chronic 2, H411).

**In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.**

Skin irritation (Xi, R 38).
Serious eye damage (Xi, R 41).
Aquatic environmental hazard, acute toxicity: very toxic (N, R 50).
This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

**2.2. Label elements**

Detergent mixture (see section 15).
This mixture being intended for professional use only, the labelling for contents under detergent regulation does not appear on the label but is resumed in section 15

**In compliance with EC regulation No. 1272/2008 and its amendments.**

Hazard pictograms :

GHS07 GHS05 GHS09

Signal Word :
DANGER
Product identifiers :

| | |
|---|---|
| CAS 69011-36-5 | ISOTRIDECANOL, ETHOXYLATED |
| EC 200-573-9 | ETHYLENEDIAMINE TETRACETIC ACID, TETRASODIC SALT |

| | |
|---|---|
| EC 219-145-8 | N-(3-AMINOPROPYL)-N-DODECYLPROPANE-1,3-DIAMINE |
| EC 230-525-2 | N,N-DIDECYL-N,N-DIMETHYLAMMONIUM CHLORIDE |
| Hazard statements : | |
| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| Precautionary statements - General : | |
| P102 | Keep out of reach of children. |
| Precautionary statements - Prevention : | |
| P234 | Keep only in original container. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves and eye protection/face protection. |
| Precautionary statements - Response : | |
| P301 + P312 | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. |
| 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. |
| P310 | Immediately call a POISON CENTER or doctor/physician. |
| P330 | Rinse mouth. |
| Precautionary statements - Disposal : | |
| P501 | This material and its container must be disposed of as hazardous waste. |

### 2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) >= 0.1% published by the European CHemicals Agency (ECHA) under article 57 of REACH: http://echa.europa.eu/fr/candidate-list-table
The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.
No other hazard identified in the current state of knowledge.

## SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Title for H, EUH and R indications: see § 16.

### 3.2. Mixtures

**Composition :**

| Identification | (EC) 1272/2008 | 67/548/EEC | Note | % |
|---|---|---|---|---|
| CAS: 69011-36-5<br><br>ISOTRIDECANOL, ETHOXYLATED | GHS07, GHS05<br>Dgr<br>Acute Tox. 4, H302<br>Eye Dam. 1, H318 | Xn<br>Xn;R22<br>Xi;R41 | | 2.5 <= x % < 10 |
| CAS: 64-02-8<br>EC: 200-573-9<br>REACH: 01-2119486762-27<br><br>ETHYLENEDIAMINE TETRACETIC ACID, TETRASODIC SALT | GHS07, GHS05<br>Dgr<br>Acute Tox. 4, H302<br>Eye Dam. 1, H318<br>Acute Tox. 4, H332 | Xn<br>Xn;R20-R22<br>Xi;R41 | | 2.5 <= x % < 10 |
| CAS: 2372-82-9<br>EC: 219-145-8<br><br>N-(3-AMINOPROPYL)-N-DODECYLPROPANE-1,3-DIAMINE | GHS06, GHS05, GHS09, GHS08<br>Dgr<br>Acute Tox. 3, H301<br>Skin Corr. 1A, H314<br>STOT RE 2, H373<br>Aquatic Chronic 2, H411<br>Aquatic Acute 1, H400<br>M Acute = 10 | C,N<br>C;R35<br>Xn;R48/22-R22<br>N;R50 | | 2.5 <= x % < 10 |
| CAS: 7173-51-5<br>EC: 230-525-2<br><br>N,N-DIDECYL-N,N-DIME | GHS06, GHS05, GHS09<br>Dgr<br>Acute Tox. 3, H301<br>Skin Corr. 1B, H314 | C,N<br>C;R34<br>Xn;R22<br>N;R50 | | 2.5 <= x % < 10 |

| | | | | |
|---|---|---|---|---|
| THYLAMMONIUM CHLORIDE | Aquatic Acute 1, H400<br>M Acute = 10<br>Aquatic Chronic 1, H410<br>M Chronic = 1 | | | |
| INDEX: 603-117-00-0<br>CAS: 67-63-0<br>EC: 200-661-7<br>REACH: 01-2119457558-25<br><br>PROPAN-2-OL | GHS02, GHS07<br>Dgr<br>Flam. Liq. 2, H225<br>Eye Irrit. 2, H319<br>STOT SE 3, H336 | Xi,F<br>Xi;R36<br>F;R11<br>R67 | [1] | 0 <= x % < 2.5 |

**Information on ingredients :**

[1] Substance for which maximum workplace exposure limits are available.

## SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person.

**4.1. Description of first aid measures**

**In the event of exposure by inhalation :**

Move the person away from the place of exposure and take him/her outside.

**In the event of splashes or contact with eyes :**

If applicable, remove contact lenses.
Wash thoroughly with soft clean water for 15 minutes, holding the eyelids open.
Take care not to introduce rinsing water in the undamaged eye.
Additional treatment to be provided immediately in an eye clinic or by an ophthalmologist. Show this container or label.
Continue rinsing until medical advice is obtained.

**In the event of splashes or contact with skin :**

Remove all contaminated or stained clothing immediately. Do not use them again until they have been decontaminated.
Rinse immediately and thoroughly with water.
In the event of skin irritation, seek medical advice. Show this container or label.

**In the event of swallowing :**

Rinse out the mouth, do not induce vomiting, keep the person calm and take him/her to a clinic or a doctor's. Show the container or label.

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

Cf. § 11

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

Refer to the recommendation of the doctor.

## SECTION 5 : FIREFIGHTING MEASURES

**5.1. Extinguishing media**

**Suitable methods of extinction**

Any extinguishing agents are authorized: foam, sand, carbon dioxide, water, powder.

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

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.
Do not breathe in smoke.

**5.3. Advice for firefighters**

Use autonomous insulating breathing apparatus and a full protective suit.

## SECTION 6 : ACCIDENTAL RELEASE MEASURES

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

Consult the safety measures listed under headings 7 and 8.
Avoid all contact with skin or eyes.

**6.2. Environmental precautions**

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.
If the product contaminates waterways, rivers or drains, alert the relevant authorities in accordance with statutory procedures

Use drums to dispose of collected waste in compliance with current regulations (see section 13).
Do not get rid in natural spaces (waterways, ground and vegetations...)

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

Absorb any spilled product using absorbent non combustible materials and sweep away or remove with a shovel. Put any waste in drums for disposal. Do not mix with any other waste.
For small quantities, dilute the product with large quantities of water and rinse away.
Do not collect the product for re-use.

**6.4. Reference to other sections**

Disposal considerations: see section 13.

## SECTION 7 : HANDLING AND STORAGE

**7.1. Precautions for safe handling**

Product for external use - do not swallow.
Avoid all contact with skin or eyes.
Handle in accordance with user instructions on label

**Recommended equipment and procedures :**

For personal protection, see section 8.
Observe precautions stated on label and also industrial safety regulations.
Avoid eye contact with this mixture at all times.
Eye bath and water point nearby.
Ensure room is well ventilated.

**Prohibited equipment and procedures :**

No smoking, eating or drinking in areas where the mixture is used.

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

Store ONLY in the original package.
Keep the container tightly closed
Store between + 5 °C and + 35 °C in a dry, well ventilated place
Do not use after the expiry date mentioned on the packaging.
Keep out of the reach of children

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

For professional use only
Refer to paragraph 1 for product indication

## SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

The information in this chapter refers to the product specifically described in this document. If the product is handled and/or exposed simultaneously with other chemical agents, these must be taken into consideration when choosing personal safety equipment.
The Exposure Threshold Limit Value and the Average Exposure Value given below are quoted by the CAS number of the substance. Paragraph 3 details the chemical name corresponding to the CAS number.

**8.1. Control parameters**

**Occupational exposure limits :**

- Germany - AGW (BAuA - TRGS 900, 21/06/2010) :

| CAS | VME : | VME : | Excess | Notes | |
|---|---|---|---|---|---|
| 67-63-0 | 200 ml/m3 | 500 mg/m3 | 2(II) | DFG, Y | |

- Belgium (Order of 19/05/2009, 2010) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|---|---|---|---|---|---|
| 67-63-0 | 400 ppm | 500 ppm | - | - | - |

- France (INRS - ED984 :2008) :

| CAS | VME-ppm : | VME-mg/m3 : | VLE-ppm : | VLE-mg/m3 : | Notes : | TMP No : |
|---|---|---|---|---|---|---|
| 67-63-0 | - | - | 400 | 980 | - | 84 |

- Spain (Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT), Mayo 2010) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|---|---|---|---|---|---|
| 67-63-0 | 400 ppm | 500 ppm | - | - | - |

- Poland (2009) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|---|---|---|---|---|---|
| 67-63-0 | 900 mg/m3 | 1200 mg/m3 | - | - | - |

Czech Republic (Regulation No. 361/2007) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|---|---|---|---|---|---|
| 67-63-0 | 500 mg/m3 | 1000 mg/m3 | - | - | - |

Slovakia (Regulation No. 300/2007) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|---|---|---|---|---|---|
| 67-63-0 | 200 ppm | 500 mg/m3 | II..1 | | |

- Switzerland (SUVA 2009) :

| CAS | VME-mg/m3 : | VME-ppm : | VLE-mg/m3 : | VLE-ppm : | Temps : | RSB : |
|---|---|---|---|---|---|---|
| 67-63-0 | 500 | 200 | 1000 | 400 | 4x15 | B |

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|---|---|---|---|---|---|
| 67-63-0 | 400 ppm | 500 ppm | - | - | - |

**8.2. Exposure controls**

**Suitable technical inspections**

Ensure the rooms are well-ventilated. Atmospheric concentrations at the workplace must not exceed the limit values given for normal conditions of use.

**Personal protection measures, such as personal protective equipment**

Use personal protective equipment that is clean and has been properly maintained.
Store personal protective equipment in a clean place, away from the work area.
Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

**- Eye / face protection**

Before handling, wear safety goggles with protective sides accordance with standard EN166.
Prescription glasses are not considered as protection.
Make safety goggles with side protection available to the personnel.
Provide eye washes in workshops.
If necessary, the nearest water supply

**- Hand protection**

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.
Gloves must be selected according to the application and duration of use at the workstation.
Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.
When handling this product, wear suitable gloves.
Nitrile, latex or vinyl gloves.
Gloves must be replaced immediately if they show signs of wear and tear.

**- Body protection**

Avoid skin contact.
Work clothing worn by personnel shall be laundered regularly.
After contact with the product, all parts of the body that have been soiled must be washed.

**- Respiratory protection**

In case of insufficient ventilation, with the risk of exceeding the TLVs (Threshold Limit values)/TWA, wear suitable breathing apparatus (mask which filters organic vapours - type A protection)

## SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

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

**General information :**

| | |
|---|---|
| Physical state : | Fluid liquid. |
| Colour: | green |
| Odour: | sweet-smelling |

**Important health, safety and environmental information**

| | |
|---|---|
| pH : | Not stated. |
| | Strongly basic. |
| Boiling point/boiling range : | Not specified. |
| Flash point interval : | Not relevant. |
| Vapour pressure (50°C) : | Not relevant. |
| Density : | +/- 1.0 |
| Water solubility : | Soluble. |
| Melting point/melting range : | Not specified. |
| Self-ignition temperature : | Not specified. |
| Decomposition point/decomposition range : | Not specified. |

**9.2. Other information**

pH > 11.5

## SECTION 10 : STABILITY AND REACTIVITY

**10.1. Reactivity**

No hazardous reaction if the instructions/indications for storage and handling are respected.

**10.2. Chemical stability**

This mixture is stable under the recommended handling and storage conditions in section 7.

**10.3. Possibility of hazardous reactions**

Cf. § 10.1 and 10.2

**10.4. Conditions to avoid**

Do not mix with other products.

**10.5. Incompatible materials**

The risk of corrosion to metals concerns the concentrated product when put in contact with crude steel or an aluminium-based alloy.
At the application rate, the product is compatible with the materials encountered for the recommended uses.
Our laboratories are available for any additional information.

**10.6. Hazardous decomposition products**

At high temperatures, dangerous decomposition products may be produced, such as fumes, carbon dioxide and carbon monoxide, nitrogen oxide.

## SECTION 11 : TOXICOLOGICAL INFORMATION

**11.1. Information on toxicological effects**

**11.1.1. Substances**

Not specified

**11.1.2. Mixture**

The toxicological data of the mixture (resulting from studies or in accordance with conventional methods) are outlined below.

**Acute toxicity :**

Acute toxicity estimate (ATE)* :
Oral ATE : ]300-2000] mg/kg

* according to the method of calculation describe in the CLP regulation (Classification, Labelling, Packaging) Part 3 Chapter 3.1 based on the data of the different components present in the product.
Ingestion may lead to irritation of the digestive system, abdominal pain, headaches and nausea.

**Skin corrosion/skin irritation :**

Dermal irritation/corrosion test in the rabbit (OECD 404):
The mixture is not classified as corrosive to skin.
Skin irritation: itching, light to moderate local redness, burning sensation…

**Serious damage to eyes/eye irritation :**

Burns, characterized by discomfort or pain, excessive blinking, lacrimation and redness, swelling of the conjunctiva.
Possibility of extensive damages to eyes if not quickly washed (serious ocular lesions are often observed in the event of prolonged contact with a solution with a pH higher than or equal to 11.5).

## SECTION 12 : ECOLOGICAL INFORMATION

Avoid any product release into waterways.
Following information is based on data from the compounds.

**12.1. Toxicity**

**12.1.1. Substances**

Not specified

**12.1.2. Mixtures**

Acute toxicity:
Very toxic to aquatic organisms.
Chronic toxicity:
Toxic to aquatic life with long lasting effects.

**12.2. Persistence and degradability**

The surfactant(s) contained in this preparation complies(comply) 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.

**12.3. Bioaccumulative potential**

No data available.

**12.4. Mobility in soil**

No data available.

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

No data available.

**12.6. Other adverse effects**

No data available.

## SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.
The packages must not be reused.
Do not pour into waterways.

**13.1. Waste treatment methods**

**Waste :**

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.
Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

**Soiled packaging :**

Empty container completely. Keep label(s) on container.
Give to a certified disposal contractor.

**Codes of wastes (Decision 2001/573/EC, Directive 2006/12/EEC, Directive 94/31/EEC on hazardous waste) :**

20 01 29 * detergents containing dangerous substances
18 01 06 * chemicals consisting of or containing dangerous substances
For information :
The waste code must be determined by the user, according to the application of the product.
The following waste codes are given as guidelines only.
18 = Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)
20 = Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions

## SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2013 - IMDG 2012 - ICAO/IATA 2014).

**14.1. UN number**

3082

**14.2. UN proper shipping name**

UN3082=ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(n-(3-aminopropyl)-n-dodecylpropane-1,3-diamine)

**14.3. Transport hazard class(es)**

- Classification :


9

**14.4. Packing group**

III

**14.5. Environmental hazards**

- Environmentally hazardous material :

**14.6. Special precautions for user**

| ADR/RID | Class | Code | Pack gr. | Label | Ident. | LQ | Provis. | EQ | Cat. | Tunnel |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | M6 | III | 9 | 90 | 5 L | 274 335 601 | E1 | 3 | E |

| IMDG | Class | 2°Label | Pack gr. | LQ | EMS | Provis. | EQ | | |
|---|---|---|---|---|---|---|---|---|---|
| | 9 | - | III | 5 L | F-A,S-F | 274 335 | E1 | | |
| IATA | Class | 2°Label | Pack gr. | Passager | Passager | Cargo | Cargo | note | EQ |
| | 9 | - | III | 964 | 450 L | 964 | 450 L | A97 A158 | E1 |
| | 9 | - | III | Y964 | 30 kg G | - | - | A97 A158 | E1 |

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.
For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

**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**

**- Classification and labelling information included in section 2:**

The following regulations have been used:
- Directive 67/548/EEC and its adaptations
- Directive 1999/45/EC and its adaptations
- EU Regulation No. 1272/2008 amended by EU Regulation No. 487/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 758/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 944/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 605/2014.

**- Labelling for detergents (EC Regulation No. 648/2004,907/2006) :**

- 5 % or over but less than 15 % : nonionic surfactants
- 5 % or over but less than 15 % : EDTA and salts thereof
- disinfectants
- perfumes

**15.2. Chemical safety assessment**

Information from the chemical safety assessment of substances present in the product is included in the appropriate sections of this safety data sheet, whenever necessary.

## SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.
It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.
The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture.
It is recommended that the information contained in this safety data sheet is provided to the users, if necessary in an appropriate form.
This information relates to the specifically designated product and may not be valid in combination with any another product. The product must not be used for applications other than those specified in heading 1 without having first obtained written handling instructions.
UPDATES SINCE PREVIOUS VERSION
- Implementation of classification and labelling in compliance with EC regulation 1272/2008.

**Title for H, EUH and R indications mentioned in section 3 :**

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H302 + H332 | Harmful if swallowed or if inhaled. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H336 | May cause drowsiness or dizziness. |
| H373 | May cause damage to organs through prolonged or repeated exposure . |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |
| R 11 | Highly flammable. |
| R 20 | Harmful by inhalation. |
| R 22 | Harmful if swallowed. |
| R 34 | Causes burns. |
| R 35 | Causes severe burns. |
| R 36 | Irritating to eyes. |
| R 41 | Risk of serious damage to eyes. |

| | |
|---|---|
| R 48/22 | Harmful: danger of serious damage to health by prolonged exposure if swallowed. |
| R 50 | Very toxic to aquatic organisms. |
| R 67 | Vapours may cause drowsiness and dizziness. |

**Abbreviations :**

ADR : European agreement concerning the international carriage of dangerous goods by Road.
IMDG : International Maritime Dangerous Goods.
IATA : International Air Transport Association.
ICAO : International Civil Aviation Organisation
RID : Regulations concerning the International carriage of Dangerous goods by rail.
GHS05 : Corrosion
GHS07 : Exclamation mark
GHS09 : Environment