

# T-fal®

## Health & Environment commitments



# TABLE OF CONTENTS



T-FAL's mission is to propose eco-friendly, safe and qualitative products, to guarantee successful healthy cooking



**Respect for the Environment**



**Safe and Reliable Products**



**Healthy cooking**



# 1. Respect for the Environment

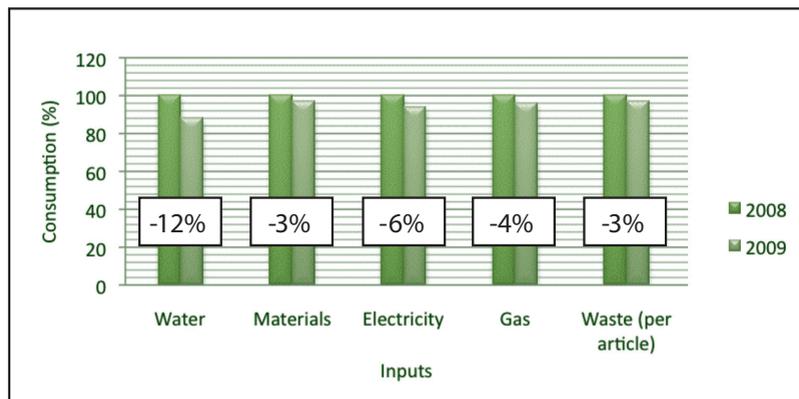
👁️ All SEB Group sites, including T-FAL, comply with the environmental requirements of ISO standard 14001.



👁️ Any new industrial or logistics entity of SEB Group is subject to specific analyses to validate this compliance, or to achieve such compliance within a maximum period of 5 years.

👁️ The major T-FAL production site in France (Rumilly - 45 million pieces per year) has also adopted a continuous improvement approach which leads to reduced ecological impacts year after year.

👁️ For example, in 2009, for each article produced, manufacturing consumption reduced significantly:



# One step to go further...

**Draw up an ecological assessment of the environmental impact of one frypan, and identify the levers for improvement**

👁️ For the first time in the history of cooking utensil manufacturers, Tefal has carried out a complete scientific study to evaluate the exact environmental impacts linked to its activity and products.

👁️ Today, the most complete and internationally recognised analysis method for carrying out this diagnosis is the Life Cycle Assessment method.

👁️ Life cycle analysis is a standardised method whose framework is defined by ISO standards 14040 and 14044.

👁️ It allows to quantify the impacts of a product or service on the environment, taking into account the whole of its life cycle.

👁️ This quantitative method also enables to compare the environmental impacts between products, and of understanding the means by which their ecological assessments can be optimised.

👁️ For the sake of rigour and neutrality, T-fal's Research and Quality teams have called upon the scientists of ENSAM's Association for Research in Technology and Science to carry out the Life Cycle Assessment. The study was also certified by experts in Life Cycle Assessment : Quantis, an independent company based in Lausanne, Switzerland, recognised at international level.



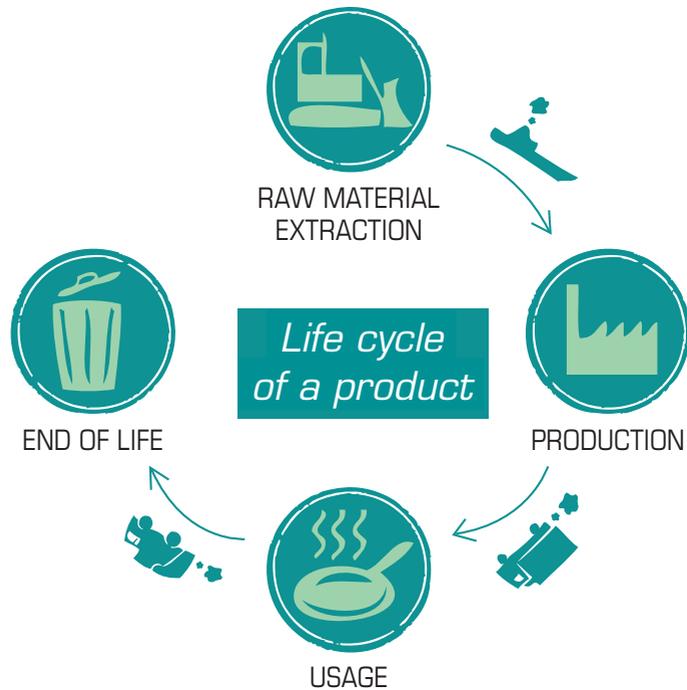
# A. Life cycle assessment methodology

## 1. The analysis of the four stages in the life of a frying pan

 The Life Cycle Assessment enables the quantification of the impacts of a product on the environment throughout its complete life cycle, and the identification of the dominant stages.

 It provides an overall vision which enables the production of an exhaustive ecological assessment.

*What are the main stages in the life cycle of a product?*



*For a frypan, it means:*



Extraction and production of the raw materials  
*E.g.: Aluminium, copper, bakelite, PTFE, etc.*



Manufacture of the product  
*E.g.: Drawing, enamelling, curing of coatings, etc.*



Usage  
*E.g.: Repeated cooking and washing.*



The end of life of the product  
*E.g.: Waste collection, transport, recycling, etc.*

The phases of transport and distribution are not considered as life stages but the impacts generated by this item are also considered.  
*E.g.: Boxes, pallets, transport lorries, etc.*

## 2. Categorisation of environmental impacts into four categories

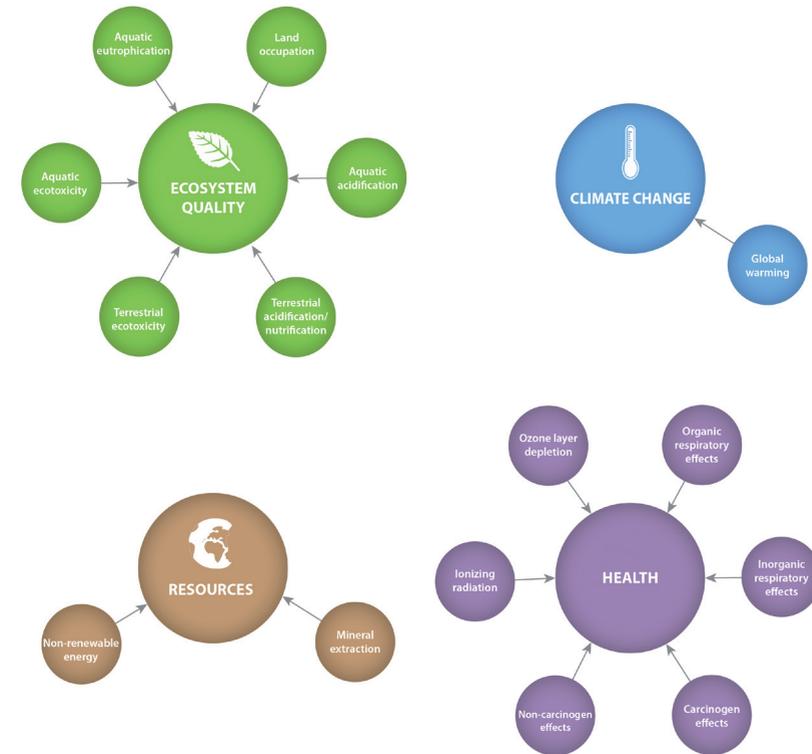
At each of the stages of its life cycle, a product consumes resources and produces emissions which result in an environmental impact.

The method consists of drawing up an exhaustive list of these generated impacts.

The Life Cycle Assessment provides a grouping of all of the impacts identified into four major categories:



What are the different impacts generated by all of the stages in the life of a product?



THE FIGURE CORRESPONDS TO THE IMPACT 2002+ METHODOLOGY

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# B. Major Conclusions

## Conclusion 1:

**Usage = more than 50% of the impacts of a frying pan**

👁️ The product usage (= cooking, washing) > 50% of the overall environmental impacts.

👁️ The environmental impact of the production of a frying pan is dominated by the raw material extraction phase, and not by that of manufacture.

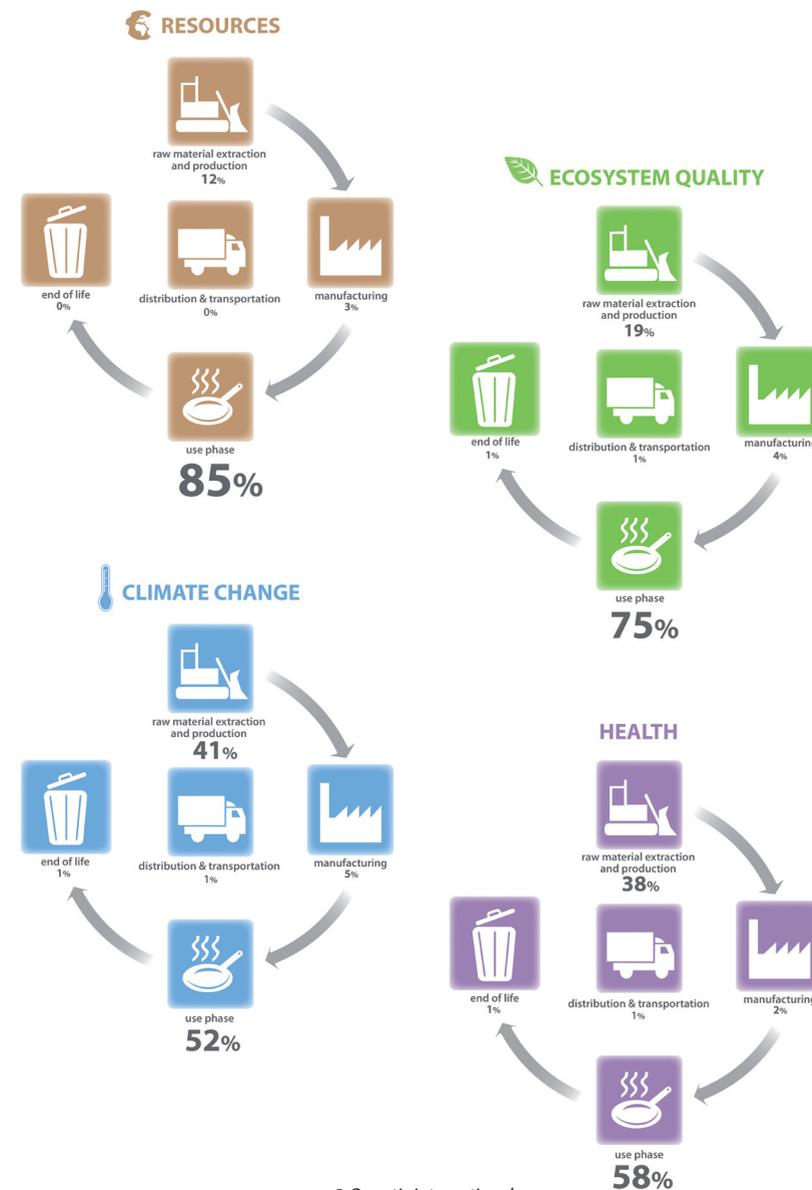
👁️ The sum of the different transport stages has a negligible impact (less than 2%).



To quantify the environmental performance of a product, it is useful to define the unit to which the potential impacts are reported. This is called the functional unit. The Life Cycle Assessment carried out by T-FAL uses the following functional unit:

«Cook 3 steaks 3 times a week during 3 years in an aluminium So Tasty frying pan of 26 cm diameter»

According to the functional unit, how does the total environmental impact of a T-FAL So Tasty frying pan break down?



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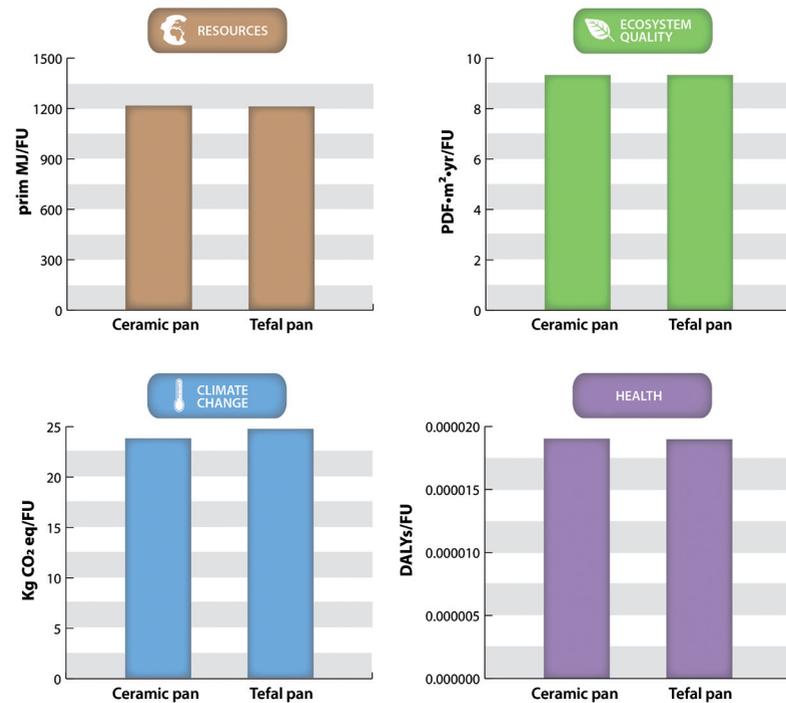
### Conclusion 2:

## For an equal life time, equivalent environmental impacts between a T-FAL PTFE frying pan and a ceramic frying pan

Life Cycle Assessment method enables to make comparisons between products with same features.

Let's consider that a ceramic coated frypan and a T-FAL non-stick frypan have a same lifetime of 3 years.

What are the respective impacts of these two products?



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According to the results obtained by the scientists of ENSAM and certified by Quantis, the independent expert in Life Cycle Assessment, the impacts linked to the life cycles of the two frying pans are similar.

To understand what these impacts represent, they are expressed below in equivalent distance travelled by car. (The range corresponds to the inclusion of the different categories of damage: climatic change, resource exhaustion, ecosystem quality and human health) <sup>1</sup>.

**TOTAL frying pan used for 3 years** is equivalent to **85 to 250 km** (according to the impact considered).

**Very low overall impact**

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1. The results of the study are valid for a frying pan manufactured and used in France, and do not apply to other countries where the energy mixes are different.

### Conclusion 3:

If the lifetime is different, The T-FAL frying pan has an actual environmental impact which is considerably smaller than the frying pan with the ceramic coating.

*Remarks on the product lifetime and consequence for the environmental impact:*

👁 Numerous comparative tests demonstrate that non-stick frying pans have an average life time of at least 7X Longer than ceramic coated frying pans <sup>2</sup>.

#### How can we measure the Non-Stick durability?

The abrasion test is the best way to measure the durability of the frying pans' non-stick coating. It is a simulation of consumer usage.

#### How does it work?

The frying pan is subjected to several series of abrasions in a laboratory machine. After 1,000 abrasion cycles, the burned milk test is carried out to verify that the frying pan has retained its non-stick properties.



Illustration of abrasion test



Illustrations of milk test

Example of performance by the latest T-FAL range and a standard ceramic frying pan<sup>3</sup>:



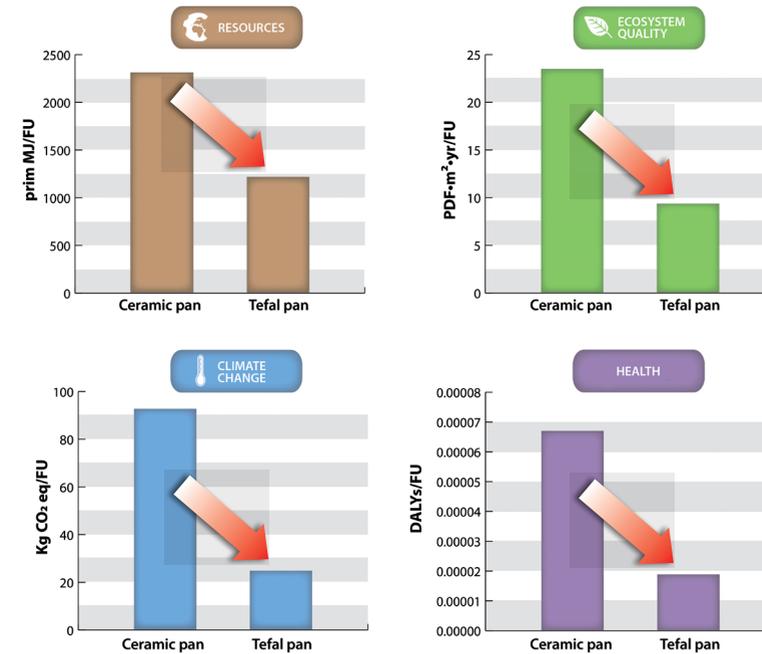
T-FAL New Intensium frying pan after 16,000 abrasion cycles



Ceramic frying pan after 1,000 abrasion cycles

2. See <http://it.news.dupont.com> <<http://it.news.dupont.com>>, <<http://www.whitford.com>>  
3. Tests carried out by the independent Laboratory SGS.

*If we integrate the product durability, what are the respective impacts of these two products?*



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T-FAL product Life Cycle Assessment, carried out by the scientists of ENSAM, and certified by Quantis, the independent expert in Life Cycle Assessment, demonstrates that «the actual environmental impact of a ceramic frying pan is considerably greater than that of a T-FAL non-stick frying pan».



## 2. Safe and Reliable Products

### T-FAL certifies the safety of products and coatings

T-FAL guarantees clean and health-neutral cooking surfaces T-FAL products comply with the strictest standards in terms of public health: European Directives 1935/2004, Food and Drug Administration-CFR 21.1798.1550.

Moreover, the French, European and American health authorities have approved the use of non-stick coatings for cooking utensils for more than 50 years.

PTFE is an inert material  
PTFE is an inert substance which produces no reaction in contact with foodstuffs, water or domestic cleaning products. Even when the coating is worn, it does not constitute any health risk.

Finally, ingesting PTFE particles if the coating is scratched or damaged does not present any risk: these particles are not assimilated by the body and remain perfectly inoffensive.

PTFE is also employed in medical uses  
PTFE is also used in the medical field. It is used, for example, to cover cardiac simulators, to replace arteries and even to coat some prostheses.

No PFOA, lead or cadmium

T-FAL always anticipates new legislation by putting in place very strict rules within its organisation.

Analyses are very regularly carried out by independent laboratories in several countries:

- INERIS in France,
- ASAHI GLASS FLUOROPOLYMERS in the UK,
- FABES Labs in Germany,
- MB Labs in Canada,
- SGS in China.

These checks have systematically established the absence of PFOA in T-FAL non-stick coated utensils. In addition, all of our culinary articles are designed and manufactured without cadmium or lead.

The «Health and Environment» eco information notice guarantees the absence of PFOA, lead and cadmium in all T-FAL products.



T-FAL can therefore reassert the safety of its products for the consumer as for the environment.



## 3. Healthy cooking

### Interview with C. Recchia, Nutritionist Doctor, General Secretary of the Food and Health Committee, Paris:

«There are three fundamental principles:

1. The temperature of the utensil of cooking should not exceed 230°C. If so, the frypan exceeds 230°C, the center of the foodstuff will exceed its ideal biological temperature which may lead to molecular links between fatty acids, proteins, or carbohydrates, and to the production of molecules, aromatic polymers, deterioration products from thermo-oxidation (...). These molecules will not be formed if the user understands that it is necessary to adhere to a temperature limit for the frying pan in order for the foodstuff to be good and to remain healthy in biological terms and therefore good for human health.

2. Ensure that the utensil has an even base so that the distribution of the heat is done in a very homogeneous manner.

3. Avoid putting too much fat when cooking.

These three elements give you the guarantee that when cooking in a frying pan, the products are perfectly healthy to a level of 99%.» (02/2011)

## What is healthy cooking?



- Less oil
- Temperature control
- Homogeneous heat diffusion

### Less oil or fat thanks to the non-stick performances

👁 For Public Health reasons, Health and nutrition programs recommend limiting the consumption of fat in foodstuffs.

👁 This preoccupation is also one of the responsibilities of our company.

👁 To this end, the non-stick coating of T-FAL frying pans does not require the addition of any fat whatsoever, which constitutes a considerable nutritional advantage.



- Less oil
- Temperature control
- Homogeneous heat diffusion

## Temperature control

Since 2000, T-FAL frying pans possess an exclusive temperature indicator, the Thermo-Spot®.

This two-coloured disc situated in the middle of the frying pan turns solid red when the coating achieves reaches 180°C: the best temperature to cook.

In terms of nutrition, it is recommended to control the temperature of the cooking utensil. In this way it is possible to preserve the flavours and nutrients of the food, and avoid any risk of polymerisation of the molecules, or the formation of undesirable alimentary compounds.

T-FAL Thermo-Spot® represents a real advantage for healthy cooking at the required temperature.



- Less oil
- Temperature control
- Homogeneous heat diffusion

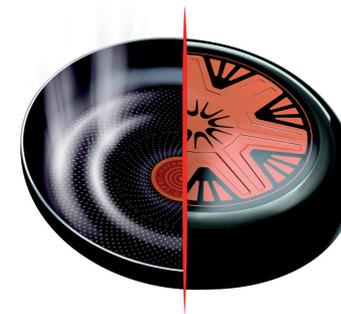
## Deformation-resistant and homogeneous cooking

The intensive use of a frying pan, and the repeated thermal shocks that it suffers (being heated then put directly under cold water after cooking), lead to its deformation.

A frying pan with a deformed base can no longer be used. Foodstuffs have a tendency to become concentrated in the lowest areas of the utensil which are in direct contact with heat sources. There is therefore a risk of overheating of foodstuffs in some places.

Unevenness of heat can lead to the failure of the dish being prepared, and to the formation of undesirable alimentary substances.

The design of the bases of T-FAL culinary articles is exclusive and is exceptionally resistant.



## T-FAL Eco-Information: a strong commitment for the Health and for the Environment



In a world where consumers are more sensitive than ever regarding their health and the environment, this Eco-Information notice guarantees the commitment of T-FAL as to the safety of its non-stick coatings for all products.

## Our Experts

Quantis International:  
Leading independent company in Life Cycle Assessment, with an expertise recognised at international level.



ENSAM:  
Association for Research in Technology and Science of the Ecole Nationale Supérieure des Arts et Métiers (ENSAM).



Nutritionist expert: Doctor Recchia  
General Secretary of the Food and Health Committee at the Heart Institute, Paris.



[www.t-fal.com](http://www.t-fal.com)



Papier recyclé