miron
VIOLETGLASS

The secret of MIRON violetglass

Sun and sunlight play an important role in our daily life. Who does not feel joy when exposed to the first rays of sunshine after a long cold winter or when seeing a beautiful rainbow or sunset? Our sun yields a wide spectrum of electromagnetic energy due to continuous thermonuclear reactions and this radiates through space in all directions. The sunlight that reaches the earth's surface consists of the visible light spectrum (with the colours of the rainbow from violet to red) and the invisible light spectrum with ultraviolet (UV) radiation, infrared (IR) radiation and micro and radio waves.

Sunlight is enormously important for growth. In fact, there is no life possible without light. This same light that initially made growth possible also accelerates the process of molecular decay. As soon as plants, for example, are ready for harvesting, they must be used immediately or preserved efficiently. If they are exposed to sunlight after being gathered, then decomposition may take place and this drastically reduces the level of bio-energy in the plant. The "Fraunhofer" Institute in Munich (Germany) believes this process of decomposition to be due to the radiation from the visible light.

In order to test this observation, chemical analysis by gaschromatography of rosewater stored for two months in either violet and amber glass was performed at this institute. It was clearly shown that within 2 months the amount of several important aromatic compounds decreased significantly following storage in amber glass. No change was observed in the sample stored in violet glass pointing to quality protection against decomposition by visible light.

Since ancient times, mankind has tried to protect its most valuable products against the damaging effects of light. The early Egyptians, for instance, preserved their precious substances in gold or violet jars. Modern times have introduced many new forms of packaging. Glass, which has been known for ages, is still one of the most widely used materials. However, most of the traditional colours used in glass packaging (clear, amber, blue and green) allow visible light to pass through (figure 1, 2 and 3) and therefore don't offer enough protection against decomposition processes induced by visible light.

MIRON violetglass does not allow light from the visible spectrum to penetrate (with the exception of violet radiation) but is transparent in the infrared spectrum (figure 3 and 5). Black glass doesn't allow any visible light to go through and is also transparent in the IR spectrum (figure 3 and 4). The most important difference between these two glass types is that black glass fully absorbs UVA and violet frequencies without allowing any transmission to occur, whilst MIRON violetglass is permeable for these frequencies. These wavelengths partially enter MIRON violetglass, giving it a unique quality: impermeable in the visible light spectrum from blue to red but open to penetration of UVA, violet and IR frequencies. Due to this special combination, sensitive materials stored in MIRON violetglass are highly protected against the processes of decomposition caused by light influences from the visible spectrum and gives it the added benefit of the positive effects that result from UVA, violet and IR frequencies.

Greenglass

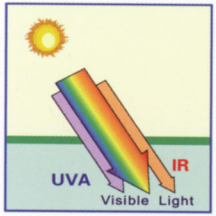

figure 1

Amberglass

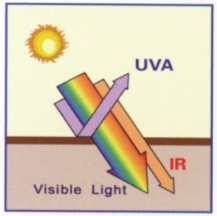

figure 2

Transmission curves of Greenglass, Amberglass, Blackglass and MIRON violetglass

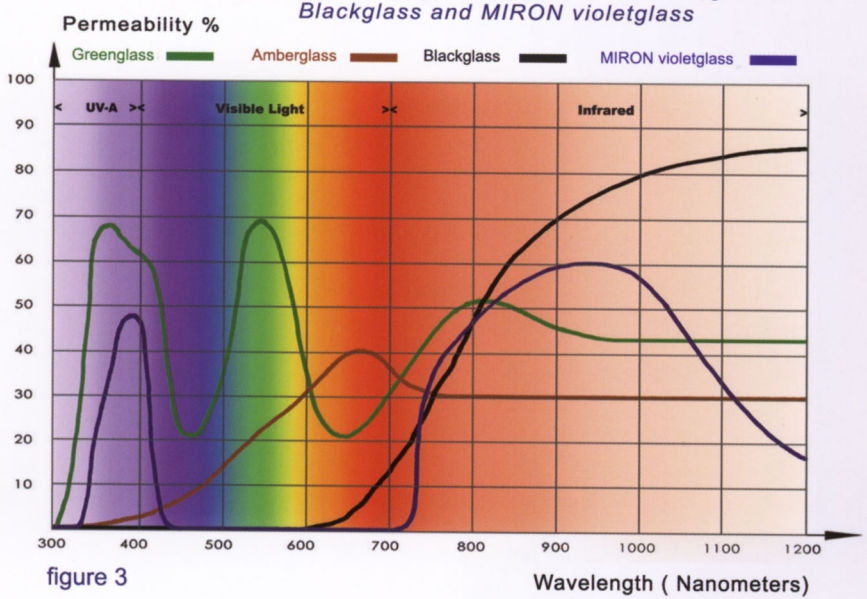

figure 3

Blackglass

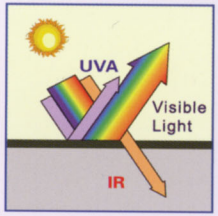

figure 4

MIRON violetglass

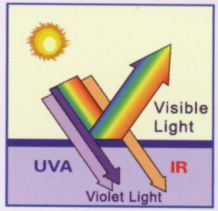

figure 5

Biophotonic research, the study of light particles emitted by cells, has shown that these wavelengths are very important for communication between living cells. Recent results from this scientific field have also shown that the quality of nutrition not only depends on chemical composition, but also on the content of light energy and the potential information that is provided by UVA and IR frequencies. This fundamental bio-information plays a crucial role in the control of all vital processes. Biophotonic measurements show that food, for example ripe grain, plants and fruits, (freshly squeezed or dried) as well as any extracts from plants (e.g. olive and linseed oil) are perfect suppliers of light energy; a transfer which is closely connected to optical memorization within the biological sample.

Nevertheless, high class edible goods lose their quality during storage and age prematurely. Biophotonic research on the quality of food, contained in a variety of package materials, show that the quality of ordered bio-energy of food stored in violetglass, is significantly higher the counterparts kept in classical containers such as glass or plastic. In addition, it was demonstrated that an optimal protection of bio-information is obtained during long-term storage in violetglass.

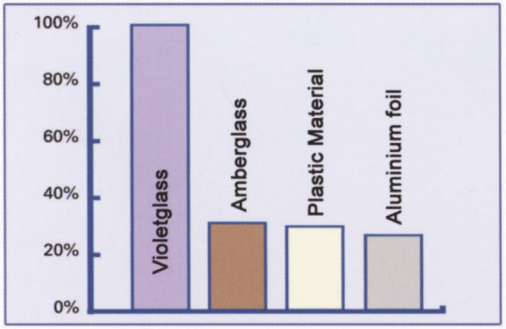

figure 6: Results of biophotonic measurements of storage quality

Scientific research of biophotonics in the field of food quality control, led by Professor Fritz-Albert Popp, is performed at the International Institute for Biophysics (IIB) in Hombroich near Düsseldorf (Germany). In the early eighties he initiated this research at the University and at the Centre of Technology in Kaiserslautern (Germany).

Since 1988, Dr. Niggli has collaborated scientifically with Professor Popp. In the middle of the nineties he started biophotonic research on the quality of food stored in a variety of package materials. The results of this studies are shown in figure 6. Biological samples stored in violetglass preserve their quality of bio-energy significantly better than in classical packaging (e.g. amber glass, Aluminium foil and plastic).

The MIRON violetglass has been available for over 10 years and has been used for a wide range of quality products such as essential oils, flower essences, sun-remedies, natural cosmetics, Royal jelly, flax oils, massage oils and lately for olive oils. Many companies have discovered that the MIRON violetglass offers a significant additional marketing value to high end quality products. Compared to the traditional colours in glass packaging,

The MIRON violetglass offers:

- ➪ Protection in the visible spectrum from blue to red
- ➪ Quality protection for long term storage
- ➪ Preservation of bio-energy
- ➪ 100% recyclable

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Violetglass is produced in cooperation between the companies **MIRON Violettglas AG** from Switzerland and **VioSol BV** from Holland.
MIRON Violettglas AG is in charge of the world wide sales and distribution of violetglass, except when used for "Spirulina and algea-like products", in which case VioSol BV is responsible.