



Belgrade. 13.05.2019.
attn Uroš Prešić, general manager
8.0 Ideal Balance, Belgrade

Dear Sir,
on 13.05.2019 we have recieved sample named as:

Active Hydrogen professional cream

The samples have been received, in their original and undamaged packages, Al tube 50ml and according to declaration the product can be used till 04/2023, with your email requesting the determination of product qualities, namely „active hydogen“ and EXPERT OPNION about ovreall quality.

What is the active hydrogen?

This term is often used interchangeably with a terms of a hydrogen atom, a hydrogen molecule and active hydrogen. Under normal conditions hydrogen is gas and very light, about 14.4 times lighter than air and always occurs as a diatomic molecule -H₂ or the hydrogen molecule. Elemental hydrogen is -H or atomic hydrogen and is has very low amount at the Earth, mainly in the upper layers of the atmosphere. Dissociation energies, means the energy of breaking molecules into atoms, is very high, so that under normal conditions of temperature and pressure does not occur.

Active hydrogen arises when under certain conditions, there is an excess of one of the electron in a hydrogen atom. In scientifuc literature, this condition is called "active" or "anionic" hydrogen and it is the basis of practical antioksidant process, and it is often for marketing purposes named as "antioxidants hydrogen." Practically, activity of the product comprising an active hydrogen depends on the partial pressure of the gas (hydrogen) which is indicated by rH. rH is the absolute indicator of the reduction potential of a product. Practically it shows the amount of active hydrogen ions in solution. rH values varyes form 0 to 42, and may be in theory negative which means overconcentration of hydrogen. A value of 42 means that it is saturated dissolved oxygen concentration while a value 1 means that the product is extremely rich in hydrogen. The value of 28 is the turning point of oxidation and reduction, values over 28 from 28-42 indicate that it is an oxidizing system, a value of less than 28 suggests that it is a reducing system. Of course, it is clear that the smaller the number of 28 the greater the reduction potential. Biological systems are in the reduced state, so the values of rH in biological fluids is significantly below 28. In particular we emphasize to connect the fact that domesticated the term "anti-oxidant" refers to the administration of the reducing substances, but the term "reductant" is judged to be to obscure for the communication with consumers, and it was decided to use term "anti-oxidant". Therefore, all expensive and nature juices, fruits and the food like like that are decalred as "anti-oxidant" are practically the reducing food.

rH determination is done according to the following formula from the measured real-time values and ORP and pH of a sample.

$$rH = \frac{(ORP + 204)}{30} + 2 \cdot pH$$





ИНСТИТУТ ЗА ОПШТУ И ФИЗИЧКУ ХЕМИЈУ INSTITUTE OF GENERAL AND PHYSICAL CHEMISTRY

Sample Active Hydrogen professional cream

ORP -658

pH 8.0

$$rH = (-658 + 204) / 30 + 2 \times 8.0$$

$$rH = -15.13 + 16.0$$

$$rH = +0.87$$

To clearly understand the value of this result it should be pointed out that ordinary tap water has rH about 28.2, most respected antioxidants juices around 18, and famous and acclaimed antioxidant green tea has rH about 23 .

There is no doubt that the delivered product is very strong reducing agent based on dissolved "active hydrogen" with the calculated value rH of about 0.87 which is one of the products named as "extremely rich with hydrogen"

We would like to use this opportunity to remind you that IOFH (Institut za Opstu I Fizicku Hemiju – Institute for General and Physical Chemistry) is, in accordance with Accreditation Body of Serbia (01-377), an accredited laboratory, in accordance with SRPS ISO 17025:2006 standard. The Ministry of Science of Republic of Serbia has accredited IOFH as a „Research & Development Institute“, in general area of chemistry and physical chemistry.

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If you have any questions, please do not hesitate to contact us.
We sincerely hope this data will help you in your further work.

Regards

dr Divna Majstorović, Head of Lab



dr Stevan Blagojević, general manager



11158 BELGRADE 118, SERBIA, Studentski trg 12 - 16, P. O.Box 45
+381 (11) 2-637-569, +381 (11) 2-635-364, +381 (11) 3283 185



Fax: +381 (11)2-180-329, +381 (11) 2639-624, E-mail: office@iofh.bg.ac.yu