



НАЦИОНАЛНИ ЦЕНТАР ЗА КОНТРОЛУ ТРОВАЊА
NATIONAL POISON CONTROL CENTRE

Int. 11-

Date: August 17, 2007

TOXICOLOGY EVALUATION

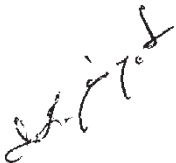
For the product:

Euras Gel

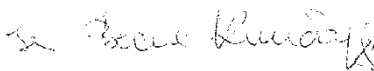
At the request of the Company TECHNOLOGY EURAS d.o.o., Lazareviceva 6, Belgrade, the Chair for of Clinical, Analytical and Experimental Toxicology and Pharmacology of Military Mmedical Academy and National Poison Control Center deliver this Toxicology Evaluation for the product Euras Gel, based on stipulations of the ACT ON PRODUCTION AND TURNOVER OF POISONOUS MATTERS (Official Gazette of FRY no. 15/95).

The Chair for of Clinical, Analytical and Experimental Toxicology and Pharmacology has completed evaluation performed by group of experts and approved the form in which it is sent.

Enclosure: Evaluation Text


Head of the Department of Clinical,
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SUBJECT : Toxicology Evaluation relating to **EURAS GEL** product – Waterproofing Gel used in Civil Engineering.

This Toxicology Evaluation was performed at the request of the Company TECHNOLOGY EURAS d.o.o ., Lazareviceva 6, Belgrade, submitted on August 24, 2007, with enclosed documentation and other sources; relating to **EURAS GEL** the weatherproofing gel used in civil engineering, being a produced by Company Euras Technology Ltd, Royal Sunset Villas, Karpasias 15, 4531, Moutagiaka Area, Limassol, Cyprus for required designation and classification relating to poisonous groups.

I GENERAL DATA ABOUT THE PRODUCT

1. Name of the product EURAS GEL (dry substance)

2. Composition, natural Sodium Bentonite - 100%

3. Impurities

- Free crystalline acid (CAS no. 14808-60-7) in alveolar dust
- Alveolar dust < 2.0%
- Alveolar dust (< 7.1 um) < 5.0%
- Proportion of dust containing the free SiO₂ that can be inhaled
- (including Quartz, Cristobalyte, Tridymite) < 0.1%

4. Physical chemical characteristics:

- Appearance dust: sand-colored powder
- Odor: odorless
- Density: 2.6 g/cm³
- Bulk density: 720 kg/m³
- Dissolution in water: not soluble
- pH: 8.5-10.5 (100g/l of water at 20 °C)

5. Stability and reactivity

Stable, unknown reactions to other substances which can create toxic variations. None damaging decomposition by-products could occur .

6. Flammability and explosiveness

The product is neither inflammable nor explosive.

Since the product itself does not burn, in case of fire, appropriate measures should be applied for fire distinguishing of other inflammable materials.

7. Handling and storing

When handling the products, dust creation and its breathing are to be avoided.

Proper ventilation should be ensured.

The product is extremely hygroscopic.

It should be stored in well-closed containers at dry place.

8. Measures to be taken in case of product shedding

None particular measure in respect to environmental protection is required.

It is advised to avoid dust inhalation

9. Producer "EURAS TEGCHNOLOGY Ltd", Limassol, Cyprus

10. Importer "TECHNOLOGY EURAS D.O.O.", Belgrade, Lazareviceva 6.

11. Intended Utilization of the Product

Sodium Bentonite represents a natural water-binding mineral.

The product is mixed with water in proportion of 1:10 up to 1: 100, depending from the unit where it is applied, during which conditions gel with waterproofing characteristics is being formed.

12. Packaging - in bags of 25 kg

13.Planned annual importation in Serbia: 5-10 tons

14.Registration status of the product – Products based on natural bentonite sodium are used for similar purposes throughout the world. The products are registered in the EU in compliance to order of EC and are designated as following

- Danger sign Xi
- Warning sign R 36/37/38
- Notice sign S 24/25

II TOXICOLOGICAL CHARACTERISTICS OF THE PRODUCT

The producer has not performed examinations of EURAS GEL toxicological characteristics. Evaluation of toxicological characteristics of this product has been performed based on data on toxicological characteristics of similar products.

1. Acute oral toxicity

LD 50 (rats) >5000 mg/kg

2. Acute dermal toxicity not appearing

3. Acute inhalation toxicity not appearing

4. Irritability and sensitization

Irritating effects on eye mucous membrane are of a moderate intensity, being consequence of mechanical and abrasive action of the powder. In the same way, it affects skin and respiratory system. Skin contacts do not cause sensitization.

5. Experience with people

In case of prolonged MDK exceeding, inhalation of fine quartz powder can lead to silicosis. Skin contacts cause dry and fissured skin.

6. Eco-Toxicology

The product is composed of natural minerals without harmful effects on environment. It is not biologically degradable.

III DATA ON ACTIVE MATTERS

III-1.1. General data on **Sodium Bentonite**

1. Chemical name: Aluminum Magnesium Silicate
2. Other appellations: Sodium Bentonite, Aluminum Phyllosilikate, Montmorillonite, Bentonite Magma, Tixoton, Fullers Country, Gumbrin, Accofloc 352, Accugel F, Akaja, Altonit SF, Ankerpoort Colclay A90, Aqua Gel, Aquagel Gold, Assam, Askangel, Baroko, Ben-Gel 11, Yellow Stone, Western Bond, Natural Gel, Hydrocol Hsuf, Kunigel V2, Mineral Colloid 101, Mineral Colloid 103, Polar Gel T
3. CAS no.: 1302-78-9
4. EINCS no.: 215-108-5
5. Molecular formula: $(\text{Na})_{0.33}(\text{Al}, \text{Mg})_2\text{Si}_4\text{O}_{10}(\text{OH})_2(\text{H}_2\text{O})_n$
6. Physical and chemical characteristics
 - Appearance: powder in beige color (as dry) or as gel of green colour
 - Odor: odorless
 - Density: 2.6 g/cm³
 - Dissolution in water: not soluble
 - pH: 8.5-10.5 (100g/l of water at 20 °C)
7. Stability and reactivity

It is stable. Reactions with other substances are not known, in which occasion toxic products can result, nor any damaging decomposition by-products.
8. Flammability and explosiveness

The product is neither inflammable nor explosive

III – 1.2. Toxicological characteristics of sodium bentonite

1. Acute oral toxicity
LD 50 (rats) >5000 mg/kg

Sodium Bentonite is natural mineral with high absorption power (can bind 15 times water volume), in which occasion it is transformed into gelatinous consistency.

The Sodium Bentonite in gel form is not harmful or toxic and is used as basis in production of cosmetic products like creams and gels for skin, toothpastes and lipsticks.

Domestic cats having ingested big quantities of sand containing Sodium Bentontie (added in pas for absorption of cats' excretions) such issues as vomiting, gastrointestinal conditions,

electrolytic disturbances and anemia are described as consequence of high intake of the substance and as a result of water and minerals binding.

2. Acute dermal toxicity: not appearing

3. Acute inhalation toxicity: not appearing

4. Irritability and sensitization

Irritating effect on eye mucous membrane is of moderate intensity, being consequence of mechanical, abrasive action of the powder. In the same way, it affects skin and respiratory system. Skin contact does not cause sensitizations.

5. Chronic inhalation toxicity

Bentonite is mineral of silicate structure silicate mineral structures, whose concentration varies from 1 to 24%. Chronic inhalation can cause silicosis, for which reason MDK is prescribed in case of professional exposition.

MDK for crystalline silicon – SiO_2 -(JUS 1991)=2mg/m³

6. Although there are some reports on possible cancerous reactions of quartz powder in cases of chronic inhalation, dry bentonite is not classified as cancerous, neither is it considered as teratogenic, embryogenic nor feto-toxic and it does not lead to reproductive toxic mutations.

7. It does not have harmful effects on living surrounding. It is not biologically degradable.

III – 1.3. Conclusive opinion on sodium bentonite

Sodium Bentonite in form of gel does not have any harmful effects. Dry Sodium Bentonite can irritate eyes, skin and respiratory system. Based on toxicological characteristics, it can be classified in III group of poisons with following signs:

- Danger sign: Xi
- Warning sign: R 36/37/38
- Notice sign: S 24/25

IV OTHER DATA

1. Preventive measures and personal protection measures

During work with dry Sodium Bentonite, hygienic technical protective measures should be respected and proper ventilation should be ensured, so that dust concentration does not surpass MDK. If that cannot be achieved by ventilation, appropriated protection equipment should be provided (dust masks with filters for particles P2). Protective clothing, gloves and spectacles should be used.

2. Effects on man and first aid measures

In case of contact with skin, it is recommended to wash it with soap and water. The dust inhalation should be avoided and one should get out for fresh air. If the product enters oral cavity, water rinsing is recommended. Vomiting should not be induced nor the stomach rinsing. When necessary, a physician should be consulted and Center for poisons control of the VMA Clinic.

V FINAL FINDING AND PROPOSITION

Based on data stated in this evaluation and documentation at the disposal, the following can be concluded:

1. **Euras Gel** product of Company Euras Technology Ltd, Royal Sunset Villas, Karpasias 15, 4531, Moutagiaka Area, Limassol, Cyprus, which is as dry powder mixed with water in proportion of 1:10 up to 1: 100, depending from the unit where it is applied, under which conditions a gel with waterproofing characteristics is formed. In is concluded that the product can be used in the previewed objectives.

2.The active matter in the product is natural Sodium Bentonite. This mineral in form of gel does not have any harmful effects, while in form of dry powder it causes effects, due to influence of the powder (quartz powder etc.). On basis of its toxicity and toxicological characteristics it can be classified in III group of poisons with following signs:

- Danger sign: Xi
- Warning sign: R 36/37/38
- Notice sign: S 24/25

3. Product **Euras Gel** which is dray Sodium Bentonite and can also be classified in III group of poisons with following signs:

- Danger sign: Xi
- Warning sign: R 36/37/38
- Notice sign: S 24/25

Belgrade, August 17, 2007

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2. Slavica VUCINIC Dr. PhD in Med. Sciences, Assistant Professor
3. Zoran SEGRT Dr. PhD in Med. Sciences, Assistant Professor

Literature:

1. "Techocology Euras d.o.o.", Belgrade registration documentation for product Euras Gel
3. Bentoninte <http://.wikipedia.org/wiki/Bentonite>. August 2007
4. Fish Scientific Bentontie Matieral Safety Data Sheet ACC#02585 Revision #7
Date: March 15, 2007. <https://fscimage.fishersci.com/msds/02585.htm>
5. Bentonite International Chemical Safety Cards
<http://www.cdc/niosh/ipcsneng/neng0384.html>