

JAPAN COSMETIC INDUSTRY ASSOCIATION

March 30, 2011

Fukushima Nuclear Power Plant I Accident and Safety of Cosmetics Manufactured in Japan

Various reports regarding the accident are released every day by Japanese Government as well as by media including radioactive substances detected in drinking water and agricultural products in some area near to Fukushima. Many of consumers must have concerns about the safety of cosmetics manufactured in Japan.

Japan Cosmetic Industry Association would like to extend the following message to consumers who hope to use cosmetics without concern. Cosmetic products manufactured in Japan are safe based on available data as shown in the below.

1. Cosmetics are manufactured in in-door environments highly controlling extraneous substances and particles. The possibility that radioactive substances in the atmosphere would affect the production process is extremely low.

2. Provided that the water with acceptable standard level of radioactive substances applied to drinking water designated by Ministry of Health, Labour and Welfare is used in the all manufacturing processⁱ, and that the product is used every day for one year, the total amount of radiation exposure from the cosmetic product would be no more than 7.8 microsieverts per yearⁱⁱ, which has no effect on human health.

3. Japanese Government states the present level of radioactive substances in water supply does not pose any problem when used in contact with human skin by hand washing, shampooing, bathing, etc.

The same can be said for cosmetic products, which are mainly applied to the skin. Thus we believe cosmetic products, even if they are manufactured using the said water are safe when used under normal and foreseeable way.

As it is well known, we are exposed to 2,400 microsieverts of naturally occurring radiation per year on averageⁱⁱⁱ.

We, Japan Cosmetic Industry Association state that cosmetics produced in Japan will not in any way adversely affect consumers' health due to radioactive substances released into the atmosphere by the recent accident at Fukushima Nuclear Power Plant I.

JAPAN COSMETIC INDUSTRY ASSOCIATION

Japan Cosmetic Industry Association will continue to closely monitor the information released by Japanese Government and other bodies, and will put top priority in our activities to ensure the safety of cosmetics manufactured in Japan to respond to all consumers in the world.

Japan Cosmetic Industry Association
Toranomom 45MT Bldg., 6F, 5-1-5,
Toranomom, Minato-ku, Tokyo, Japan

ⁱ Calculations based on hypotheses that total amount of radioactive substances in cosmetics are taken into human body by use of cosmetics. Since cesium is not detected at present in the water supply, the radioactive decay of Iodine 131 is used for the calculation, considering days necessary for manufacturing, quality control, shipment from warehouse to consumers. Refer to Attachment for detailed calculation method.

ⁱⁱ Calculation using the level of oral intake since no such figure exists for cosmetics at present.

ⁱⁱⁱ Report by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)

Calculation of radiation exposure based on the assumption that these substances come into cosmetic products

The calculation method shown here is used to obtain the conclusion described in JCIA Stand-by Comment "Fukushima Nuclear Power Plant I Accident, March 30, 2011".

The formula to calculate radiation exposure estimation for cosmetics does not exist at present. Therefore, the formula to calculate the estimation for food is tentatively used here.

Assumed conditions for this equation are as follows:

1. Total assumed exposure level by cosmetics are calculated as the total amount of exposure by the use of various cosmetics per day. The main exposure is supposed by water, and the exposure by the other routes is assumed as negligible.
2. Water used in cosmetics is assumed containing ^{131}I with the tentative regulated value 300Bq/kg.
3. Days needed for the treatment of water (raw water supplied by public system) used in the production are assumed as 1 day taking into account the process with ion exchanger, etc.
4. Days needed for the process from production and filling to shipment from warehouse are assumed as 8 days
5. Days needed from shipment from warehouse to sales counters are assumed as 7 days (more days will be needed in case of export)

Estimation of Radiation exposure:

The yearly estimate is obtained by Radiation exposure estimates for food published by Food Safety Commission which has been established in 2003 in Cabinet Office by multiplying 365 days in the following equation.

$$\mu\text{SV}/\text{year} = \frac{\text{assumed exposure level}(\text{Bq}/\text{kg}) \times \text{daily exposure calculated}(\text{g}/\text{day})}{1000 \text{ (note 1)}} \times \text{effective dose} \times 365 \text{ days} \times 1000 \text{ (note 2)}$$

where :

daily exposure calculated	=	17.79g/day ¹
effective dose Bq/kg of ^{131}I	=	1.6×10^{-5} ²
half-life decay of ^{131}I	=	8 days

notes

1 : to convert the unit into kg

2 : to convert the unit into μSV

Based on the premises for the calculation 1 to 5, minimum days necessary from taking the water from public supply to delivery of cosmetics to sales counters are assumed as 16 days. Provided that ^{131}I is decayed in half life in 8 days, the level of this substance after 16 days is expected to be decreased to 75Bq/kg.

$$300\text{Bq}/\text{kg} \times 0.5 \times 0.5 = 75\text{Bq}/\text{kg}$$

On the assumption that the level of ^{131}I is 75Bq/kg when a consumer buys the cosmetic, total radiation exposure of ^{131}I per year based on daily cosmetic exposure calculation : 17.79g is obtained as follows :

$$7.8\mu\text{SV}/\text{year} = \frac{75\text{Bq}/\text{kg} \times 17.79\text{g}/\text{day}}{1000 \text{ (note 1)}} \times 1.6 \times 10^{-5}(\text{mSV}/\text{Bq}) \times 365 \text{ days} \times 1000 \text{ (note 2)}$$

notes

1 : to convert the unit into kg

2 : to convert the unit into μSV

¹ The SCCP's Notes of Guidance for the Testing of Cosmetic Ingredients and their Safety Evaluation, 6th Revision, 19 December 2006

² Published by Food Safety Commission. Since cesium is not detected at present in the water supply, the value for ^{131}I is used for the calculation.