

Evaluation Report for Category B, Subcategory 2.1 Application

Application Number: 2020-1591
Application: New End-Use Product Chemistry - Guarantee
Product: Broan NuTone SurfaceShield Powered by Vyv
Registration Number: 34521
Active ingredients (a.i.): Device with ultraviolet A (wavelength 315-400 nm) and violet light (wavelength 380-450 nm)
PMRA Document Number: 3237489

Purpose of Application

The purpose of this application was to register a LED device, Broan NuTone SurfaceShield Powered by Vyv that can reduce the growth of fungi on hard surfaces.

Chemistry and Environmental Assessment

Chemistry and environmental assessments were not required for this application.

Health Assessments

Potential sites of exposure to visible light and Ultraviolet A (UVA) radiation are the eyes and skin. The main acute skin lesion from exposure to ultraviolet radiation is erythema or sunburn. Erythema can be induced by ultraviolet light (including UVA) and the wavelength of light, skin type, and skin pigmentation all influence whether it will occur. Other acute skin responses to ultraviolet light include tanning and photosensitivity. The principal acute effects of Ultraviolet Radiation (UVR) on the eye are photokeratitis (inflammation of the cornea) and photoconjunctivitis (inflammation of the conjunctiva). UVA wavelengths contribute to skin ageing and wrinkling. Damage to skin cells can increase the rate of aging of the skin or cause skin cancer. Chronic UVR exposure is believed to be at least one of the causative factors in the development of cataracts.

There is no potential for occupational exposure since the product is for domestic use.

The risks to bystanders and individuals are acceptable when Broan Nutone Surfaceshield is used according to label directions. Precautionary and direction for use statements on the product label aimed at mitigating residential exposure are considered adequate to protect individuals from any potential risk due to exposure.

Toxicology and dietary exposure assessments were not required for this application.

Value Assessment

Broan NuTone SurfaceShield Powered by Vyv is a LED device that, when used continuously, is capable of reducing growth of fungi on hard surfaces. The laboratory data submitted was sufficient to demonstrate that this product has acceptable value.

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the available information and has found it sufficient to support the registration of Broan NuTone SurfaceShield Powered by Vyv.

References

PMRA References
Document
Number

A. List of Studies/Information Submitted by Registrant

- 3114966 2020, DACO 10 - Value Assessment Division - SurfaceShield, DACO: 10.1
- 3114969 Murdoch L. E., K. McKenzie, M. Maclean, S. J. MacGregor, J. G. Anderson.,
2020, Lethal effects of high-intensity violet 405-nm light on *Saccharomyces cerevisiae*, *Candida albicans*, and on dormant and germinating spores of *Aspergillus niger*, DACO: 10.2.1
- 3114970 2019, SurfaceShield State submittals 20191220, DACO: 10.2.3
- 3114971 Maclean, M, LE Murdoch, SJ MacGregor, and JG Anderson., 2020, “Sporicidal Effects of High-Intensity 405 nm Visible Light on Endospore-Forming Bacteria.” *Photochemistry and Photobiology*. 2012., DACO: 10.2.1
- 3174500 Response to Request for Additional Information - Anti-Microbial Efficacy - November 2020, DACO: 10.2
- 3114967 2020, DACO 5.2 Use Description Scenario – Application and Post-Application. DACO: 5.2
- 3114970 2019, SurfaceShield State submittals 20191220 (UL Project 4789126167, ACGIH and IEC Results), DACO: 10.2.3

B. Additional Information Considered

i) Published Information

- 2559369 International Commission on Non-ionizing Radiation Protection (ICNIRP), 2007, Protecting Workers from Ultraviolet Radiation, ICNIRP in collaboration with ILO and WHO, ICNIRP 14/2007, DACO: 12.5.4
- 3238081 Mahmoud, B.H., Hexsel, C.L., Hamzavi, I.H., and Lim, H.W. 2008. Review Effects of Visible Light on the Skin, *Photochemistry and Photobiology*, 84: 450-462 DACO 4.8

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