# Safety Tip of the Month – June 2009
# VSI Safety Committee
# "Proper Use of Sunscreen"

Exposure to ultraviolet light, UVA or UVB, from sunlight accounts for 90% of the symptoms of premature skin aging such as wrinkles and skin cancers. The most important skin-care product available to prevent wrinkles and skin cancer is sunscreen, but most people do not use sunscreen correctly. Important factors to consider with sunscreen use are the spectrum of UV radiation absorbed, the amount of sunscreen applied, and the frequency of application.

**UV Radiation**

The sun gives off ultraviolet (UV) radiation that we divide into categories based on the wavelength. UVC radiation is absorbed by the atmosphere and does not cause skin damage. UVB radiation affects the outer layer of skin, the epidermis, and is the primary agent responsible for sunburns. UVB does not penetrate glass, and the intensity of UVB radiation depends on the time of day and the season. UVA radiation penetrates deeper into the skin and works more efficiently. The intensity of UVA radiation is more constant than UVB without the variations during the day and throughout the year. UVA is also not filtered by glass.

**Sunscreen Ingredients**

Sunscreens ingredients can be divided into compounds that physically block radiation or compounds that absorb radiation. The radiation blockers are very effective at reducing the exposure of the skin to both UVA and UVB radiation. Older formulations like zinc oxide are opaque and may be cosmetically unacceptable. However, a newer formulation of micronized titanium dioxide is not as opaque and provides excellent protection. The radiation absorbing ingredients are differentiated by the type of radiation they absorb – UVA absorbers and UVB absorbers.

**Picking the Proper Sunscreen**

The SPF measures the amount of UVB absorption, but there is no method of reporting the UVA absorption. The only way to determine if a sunscreen protects against UVA and UVB radiation is to look at the ingredients. A good broad-spectrum sunscreen should have an SPF of at least 15 and contain avobenzone, titanium dioxide, or zinc oxide.

**Applying Sunscreen Properly**

Most people use sunscreen improperly by not applying enough. They apply only 25% to 50% of the recommended amount. Sunscreen should be applied liberally enough to all sun-exposed areas that it forms a film when initially applied. It takes 20-30 minutes for sunscreen to be absorbed by the skin, so it should be applied at least a half an hour before going out in the sun. Sunscreen should also be the last product applied especially on the face since some sunscreens can break down in the presence of water contained in water-based foundations and moisturizers.

**Reapplying Sunscreen**

Most instructions on sunscreen labels recommend reapplying sunscreen "frequently", but the definition of "frequently" is vague. A common instruction is to reapply sunscreen after 2-4 hours in the sun. However, one study has shown that reapplying sunscreen 20 to 30 minutes after being in the sun is more effective than waiting 2 hours. It is possible that this time period is more effective because most people do not apply enough sunscreen initially, and this second application approximates the actual amount needed. Sunscreen should also be reapplied after swimming, excessive sweating, or toweling.

**Daily Sunscreen**

Sunscreen should be applied daily. The daily use of a low-SPF sunscreen (15) has been shown to be more effective in preventing skin damage than the intermittent use of a higher SPF sunscreen.

**Sunscreen and Insect Repellents**

Insect repellents reduce the sunscreen's SPF by up to one-third. When using sunscreen and insect repellent together, a higher SPF should be used and reapplied more often.