

Just the Facts... Safety Glasses and Photochromic Lenses

1. Safety glasses with photochromic lenses may not be worn indoors. If a worker performs eye hazardous duties outdoors a significant percentage of the time, they could be provided a pair of clip-on/flip-up sun lenses to wear over their clear safety glasses or a second pair of safety glasses with a permanent sunglass tint. Glass and plastic photochromic lenses do not provide the worker with the maximum possible protection and could result in an adverse liability issue for the government in the event of an eye injury.

2. Photochromic lenses represent a safety hazard when moving from outdoors to indoors. American National Standards Institute (ANSI) Z87.1-1989, 6.5.2 states that, "Since the fading process is not instantaneous, photochromic lenses should be used with care in operations requiring critical acuity, or fast reaction to visual stimuli, particularly in operations where the wearer passes from outdoors to indoors in the course of the job; for example, a forklift operator passing from outdoors to indoors."

3. Photochromic lenses should not be used unless a glare hazard exists, such as outdoors in sunlight. ANSI Z87.1-1989 also reveals in the selection chart on page 16 that filter or tinted lenses that restrict light transmittal are "NOT RECOMMENDED" for impact eye protection, unless it is determined that a glare hazard exists.

4. Safety glasses with photochromic lenses can not be worn indoors. Technical Bulletin Medical (TB MED) 506, chapter 4.g.(2) states that, "Sun lenses and photochromic lenses are in the absorptive lens class. Both are approved for industrial use; however, only for outdoor wear. Special-purpose tints used for indoor tasks shall be static (nonphotochromic) and fit for a specific task; i.e., welding, glassblowing, etc."

5. The Tri-Service Vision Conservation and Readiness Program at the U.S. Army Center for Health Promotion and Preventive Medicine recommends:

When tinted lenses are required for job performance, they should be in the form of a flip-up lens covering an ANSI Z87.1 device; or be in a lens and frame combination meeting ANSI Z87.1 standards. Tinted lenses may be approved by the local Vision Conservation and Readiness Team for specific worksites or hazards, but will not be worn indoors unless designed for a specific indoor radiation hazard.

Photochromic lenses in industrial safety eyewear may only be used in outdoor locations where movement into and out of buildings or other facilities does not occur. The relatively slow rate of change in photochromic lenses presents a hazard to workers moving indoors or into other areas with lower illumination levels than outdoor environments. The initial darkness created by slow tint change combined with lower interior lighting reduces the illumination on indoor tasks and presents an unacceptable risk to employees. Employees wearing photochromic lenses not made of polycarbonate material must be made aware that the materials are less than optimum for impact protection and present a potential hazard when moving from an area of full illumination to one of reduced illumination.

For these reasons, photochromic lenses should rarely be authorized. Local policy may be established to totally prohibit photochromic lenses. It is the responsibility of the supervisor to ensure safe use of photochromic lenses (that is, outdoor wear only). When an employee is authorized to wear photochromic lenses, the employee should bear the additional cost over that of standard clear lenses. Photochromic lenses must be in plastic or polycarbonate material.

