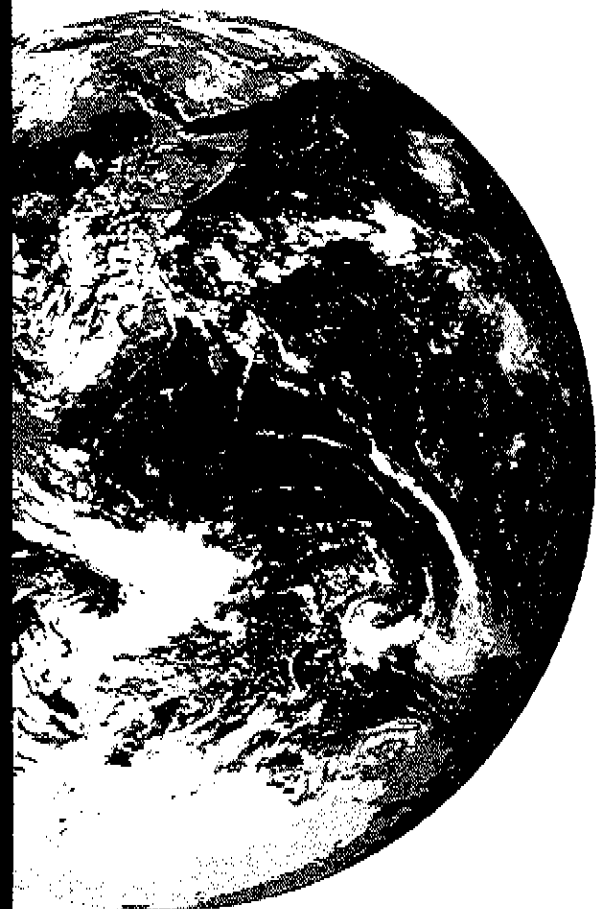


WHO/EHG/95.16
English only
Distr.: Limited



**HEALTH AND
ENVIRONMENTAL
EFFECTS OF
ULTRAVIOLET
RADIATION**

A summary of
Environmental
Health Criteria 160
Ultraviolet Radiation

GENEVA, 1995



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses, income, and transfers between accounts.

The second part of the document provides a detailed explanation of the accounting cycle. It outlines the ten steps involved in the process, from identifying the accounting entity to preparing financial statements. Each step is described in detail, including the necessary documents and procedures to follow.

The third part of the document discusses the various methods used to record transactions. It compares the double-entry system with the single-entry system, highlighting the advantages and disadvantages of each. It also explains how to use T-accounts to organize and summarize the data.

The fourth part of the document covers the process of adjusting the accounts. It explains why adjustments are necessary and how they are made. It discusses the different types of adjustments, such as accruals, deferrals, and depreciation, and provides examples of how to record them.

The fifth part of the document discusses the preparation of financial statements. It explains how to use the adjusted trial balance to prepare the income statement, balance sheet, and statement of owner's equity. It also discusses the importance of comparing the results of the current period with those of the previous period.

The sixth part of the document discusses the closing process. It explains how to close the temporary accounts (revenues, expenses, and dividends) to the permanent accounts (retained earnings and owner's equity). It also discusses the importance of reversing entries and how they are used to correct errors.

The seventh part of the document discusses the importance of internal controls. It explains how to design and implement controls to prevent errors and fraud. It discusses the different types of controls, such as segregation of duties, authorization, and documentation.

The eighth part of the document discusses the importance of ethics in accounting. It explains how to identify and avoid conflicts of interest and how to report any unethical behavior. It also discusses the importance of maintaining confidentiality and the integrity of the profession.

The ninth part of the document discusses the importance of communication in accounting. It explains how to effectively communicate with clients, management, and other stakeholders. It discusses the importance of providing clear and concise information and how to respond to inquiries.

The tenth part of the document discusses the importance of continuous learning in accounting. It explains how to stay up-to-date on the latest developments in the field and how to develop new skills. It also discusses the importance of seeking professional development opportunities and staying motivated.



**HEALTH AND
ENVIRONMENTAL
EFFECTS OF
ULTRAVIOLET
RADIATION**

A summary of
Environmental
Health Criteria 160
Ultraviolet Radiation

GENEVA, 1995

© World Health Organization, 1995

This document is not issued to the general public, and all rights are reserved by the World Health Organization (WHO). The document may not be reviewed, abstracted, quoted, reproduced or translated, in part or in whole, without the prior written permission of WHO. No part of this document may be stored in a retrieval system or transmitted in any form or by any means – electronic, mechanical or other – without the prior written permission of WHO.

The view expressed in documents by named authors are solely the responsibility of those authors.



Health and environmental effects of ultraviolet radiation

Introduction

A monograph entitled Environmental Health Criteria 160 «Ultraviolet Radiation» was published in 1994 by the World Health Organization, the United Nations Environment Programme (UNEP) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The monograph was the result of an in-depth review of the scientific literature and was primarily concerned with the effects of ultraviolet (UV) radiation exposure on human health and the environment. The penultimate draft was subjected to a WHO Task Group for final peer review prior to publication. Such a publication was considered particularly timely in view of the consequences of increasing levels of UV at the surface of the earth resulting from depletion of stratospheric ozone.

The purpose of this document is to provide a summarised form of the monograph, allowing a more general readership to have access to the information, and to provide an update on activities that have resulted from the recommendations of the Task Group that reviewed the monograph.

Exposure to UV occurs from both natural and artificial sources. The sun is the principal source of exposure for most people. Solar UV undergoes significant absorption by the atmosphere. With depletion of the stratospheric ozone people and the environment will be exposed to higher intensities of UV. The consequences of this added UV exposure are considered so serious that it was a major topic for discussion at the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992. Agenda 21, adopted by the Conference, specifically recommends to «undertake, as a matter



of urgency, research on the effects on human health of the increasing ultraviolet radiation reaching the earth's surface as the consequence of depletion of the stratospheric ozone layer.» It is this issue that underscores the current need to better understand the potential health and environmental risks of UV exposure and the changes in life-style needed to reduce UV exposure.

The scientific evidence shows that ozone depletion is caused by human-made chemicals and will persist till chlorine and bromine levels are reduced. The world community has in response to this evidence agreed, under the auspices of UNEP, on the Vienna Convention for the protection of the Ozone Layer in 1985 and on the Montreal Protocol on substances that deplete the ozone layer in 1987 (and amended in 1990 and 1992). The thrust of these agreements is to phase out the ozone depleting substances. 150 nations have ratified these agreements. A consumption of a million tonnes (in 1986) of the developed countries will be almost completely phased out by 1996 and the developing countries will phase out their consumption of about 200,000 tonnes before the year 2010. However, the long life of the chemicals already released will cause further ozone depletion for the next few years and the ozone layer is expected to fully recover in about 50 years.

INTERSUN, a global UV project, is UNEP and WHO's response to the need to disseminate information about the health and environmental hazards of excessive UV exposure. INTERSUN has developed a document entitled «UV Protective Measures» in response to the need to educate the public and particularly workers exposed to UV, on measures they can take to reduce their UV exposure. It has been involved in the development of a Solar UV Index, an index related to daily UV exposure, reported with the news and weather, that facilitates a continuing educational process about possible health effects and measures to reduce UV exposure. More details on these programmes are given at the end of this text.



Summary of the major health concerns

Skin cancer and cataracts are important public health concerns. The social cost of these diseases, such as death, disfigurement, blindness, and weakening the immune system can be overwhelming both in terms of human suffering and the financial burden. Solar UV exposure is known to be associated with various skin cancers, accelerated skin ageing, cataract of the lens of the eye and other eye diseases, and possibly has an adverse effect a person's ability to resist infectious diseases. Most of these health concerns could be avoided by reducing exposure to solar UV.

UNEP estimates that over two million non-melanoma skin cancers and 200,000 malignant melanomas occur globally each year. In the event of a 10% decrease in stratospheric ozone, with current trends and behaviour, an additional 300,000 non-melanoma and 4,500 melanoma skin cancers could be expected world-wide.

Some 12 to 15 million people in the world are blind because they have cataracts. According to WHO, up to 20% of cataracts, that is three million per year could be due to UV exposure to the eye. Experts believe that for each 1% sustained decrease in stratospheric ozone there would be an increase of 0.5% in the number of cataracts caused by solar UV (van der Leun et al 1989). In the United States alone, it costs the US Government \$US 3.4 billion for 1.2 million cataract operations per year. Substantial savings in cost to health care can be made by prevention or delay in the onset of cataracts.

Ultraviolet radiation

UV is one of the non-ionizing radiations in the electromagnetic spectrum and lies within the range of wavelengths 100 nm to 400 nm. The short wavelength limit of the UV region is often taken as the boundary between the ionizing radiation spectrum (wavelengths < 100 nm) and the non-ionizing radiation spectrum. UV can be clas-

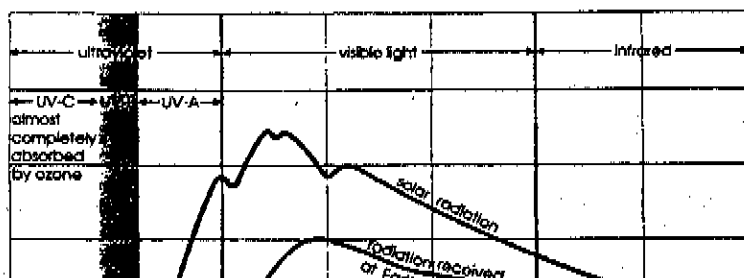


Health and environment effects of ultraviolet radiation

sified into UVA (315 -400 nm), UVB (280 -315 nm) and UVC (100 -280 nm) regions, although other conventions for UVA, UVB and UVC wavelength bands are in use.

The sun is the strongest source of UV in our environment. As sunlight passes through the atmosphere, all the UVC is absorbed and all except a small percentage of the UVB is absorbed by atmospheric components such as ozone, water vapour, oxygen and carbon dioxide. Figure 1 shows how the optical emissions of the sun are absorbed by various components of the earth's atmosphere. Snow is a particularly strong reflector of UV (almost 80% of the incident UV is reflected).

Most artificial sources of UV, except for lasers, emit a spectral continuum of UV containing characteristic peaks, troughs and lines. These sources include various lamps used in medicine, industry, commerce, research and the home.



预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_30692

