KENYA STANDARD

DKS 2582-1:2014

CODE OF PRACTICE FOR SAFETY OF CHEMICAL PRODUCTS —PART 1: CODE OF PRACTICE FOR SAFETY OF METHANOL

First Edition 2014

TECHNICAL COMMITTEE REPRESENTATION

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REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

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Foreword

This Code of Practice has been prepared by the Technical Committee on Industrial Solvents and Chemicals under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

This Code of Practice outlines preventive measures aimed at achieving tolerable risk associated with methanol, for vulnerable consumers especially the ones in the alcoholic beverage, laboratory and industrial sectors.

The Code is meant to address an urgent emerging public health and safety issue regarding misuse of Methanol in alcoholic drinks and has been formulated using the procedure for urgent Kenya Standards.

Methanol (CH_3OH), also known as methyl alcohol, is a clear colourless volatile liquid. Its main toxic effect is exerted upon the nervous system. It is a dangerous fire hazard when exposed to heat or flame. It is readily absorbed from the gastro-intestinal tract. Initial symptoms vary according to the dose and consist of weakness and fatigue, dizziness, headache, nausea, gastrointestinal disturbances and some degree of inebriation.

In non-lethal cases of methanol poisoning, recovery is very slow and is accompanied by symptoms of malaise and painful extremities. This is a consequence of the gradual oxidation of methanol to formic acid. This acid accumulates and markedly depletes the alkali reserve of the body. Inhalation of methanol vapour at high concentrations may irritate the mucous membranes of the respiratory tract and cause mild symptoms of systemic toxicity.

Repeated or prolonged contact of methanol liquid or vapour with the skin causes defatting, drying, brittleness, cracking and irritation. Absorption from prolonged or massive skin contact can lead to serious poisoning and possibly to death.

Repeated exposures by any route or absorption may cause systemic poisoning including varying degrees of temporary or permanent visual impairment. The most characteristic feature of severe methanol poisoning is visual disturbance. However, if the patient recovers, partial or total blindness may persist for some time or be permanent. The visual disturbance results from metabolic formation of formaldehyde within the optic tissues.

During the development of this standard, reference was made to the following documents:

IS 7444:1974(Reaffirmed 2002) Indian Standard Code of safety for Methanol

IS 4117: 2008 Alcohol denaturants — Specification

ISO/IEC Guide 51:2014, Safety aspects — Guidelines for their inclusion in standards

Acknowledgement is hereby made for the assistance received from these sources.

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CODE OF PRACTICE FOR SAFETY OF CHEMICAL PRODUCTS — PART: 1 CODE OF PRACTICE FOR SAFETY OF METHANOL

1 Scope

1.1 This Part of KS 2582 prescribes safety measures aimed at reducing to a tolerable level, risk resulting from intended use and reasonably foreseeable misuse of Methanol for Industrial and laboratory use.

1.2 This Code of Practice does not cover product characteristics of methanol which are covered in KS 2471 for industrial grade Methanol and KS ISO 6353-2 for laboratory grade Methanol.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this Kenya Standard. For undated reference, the latest edition of the normative document referred to applies.

KS 2471, Methanol for Industrial use — Specification
KS ISO 6353-2, Reagents for Chemical Analysis, Part 2: Specification— First Series
KS 2384, Transport of dangerous goods —Operational requirements for road vehicles
KS ISO 11014, Safety data Sheet for chemical products—Content and order of sections
KS 2530, Transport of dangerous goods — Packaging and large packaging for road and rail transport
KS OHAS 18001, Occupational health and safety management systems — Requirements
KS 2583, Denatonium Benzoate in Alcohols—*Test Method*

3 Terms and Definitions

For the purposes of this Standard, the following terms and definitions shall apply.

3.1
intended use
use in accordance with information provided with a product or system, or, in the absence of such information, by generally understood patterns of usage

3.2
reasonably foreseeable misuse
use of a product or system in a way not intended by the supplier, but which can result from readily predictable human behavior.

Note 1 to entry: Readily predictable human behaviour includes the behaviour of all types of users, e.g. the elderly, children, expectant women and persons with disabilities

Note 2 to entry: In the context of consumer safety, the term “reasonably foreseeable use” is increasingly used as a synonym for both “*intended use* ” and “reasonably foreseeable misuse.”

3.3
risk
combination of the probability of occurrence of harm and the severity of that harm.

3.4
tolerable risk
level of *risk* that is accepted in a given context based on the current values of society

Note 1 to entry: For the purposes of this Standard, the terms “acceptable risk” and “tolerable risk” are considered to be synonymous.

3.5
vulnerable consumer
consumer at greater *risk* of *harm* from products or systems, due to age, level of literacy, physical or mental condition or limitations, economic status or inability to access product *safety* information

4 Preventive Measures

4.1 Prevention of reasonably foreseeable misuse

4.1.1 Containers for methanol shall be clearly and indelibly marked with words ‘’ Poisonous’ in addition to the marking requirements specified in KS 2471.

4.1.2 All consignments of Methanol shall be accompanied with Material Safety Data Sheet with contents complying with KS ISO 11014.

4.1.3 The storage and handling of Methanol in glass containers is forbidden except in small amounts for laboratory use**.**

4.1.4 When shipped by rail, water or highway, Methanol shall be packed in authorized containers in accordance with KS 2530.

4.1.5 Rules and procedures for the safe operation and handling of all road vehicles that are used for the transport of Methanol shall be as outlined in KS 2384.

4.1.6 All grades of Methanol except those meant for laboratory use shall be denatured with Denatonium Benzoate to prevent oral intake by vulnerable consumers.

4.1.7 When tested in accordance with KS 2583 all grades of methanol except the grades meant for laboratory use shall contain not less than 8 ppm of Denatonium Benzoate denaturant.

4.2 Environmental Control

4.2.1 Supplies of methanol shall be labeled as poisonous and secured from access of unauthorized persons.

4.2.2 Contact with the skin and eyes as well as inhalation of Methanol vapour shall be avoided. It shall be made clear that this is not a form of alcohol for drinking.

4.2.3 Information detailing instructions for safe handling, use, storage, and disposal shall be provided by the manufacturer/Supplier of Methanol. The instructions shall include first aid measures in case of contact with the skin, eyes or oral intake.

4.2.4 Organizations, retail outlets and private individuals handling Methanol shall implement hazard identification, risk assessment and controls as per KS OHAS 18001 to minimize risks associated with its intended use.