
INTERNATIONAL STANDARD



2131

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Surface active agents — Simplified classification

First edition — 1972-11-01

Sample Document

get full document from standards.iteh.ai

UDC 661.185 : 168.2

Ref. No. ISO 2131-1972 (E)

Descriptors : surfactants, classifying

Price based on 5 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2131 was drawn up by Technical Committee ISO/TC 91, *Surface active agents*.

It was approved in June 1971 by the Member Bodies of the following countries :

Australia	Japan	Spain
Austria	Korea, Rep. of	Switzerland
Belgium	New Zealand	Thailand
Egypt, Arab Rep. of	Poland	Turkey
France	Portugal	United Kingdom
Germany	Romania	U.S.A.
Israel	South Africa, Rep. of	U.S.S.R.

No Member Body expressed disapproval of the document.

Surface active agents – Simplified classification

1 SCOPE AND FIELD OF APPLICATION

This International Standard establishes a simplified classification of surface active agents, in conformity, regarding the arrangement of radicals, with the scientific classification (ISO/R 896).

2 PRINCIPLE

The simplified classification of surface active agents enables their characteristics to be expressed by an abbreviated lettering and numbering system, consisting of a letter and four figures (five in the case of compounds comprising several hydrophilic groups), for the main structural elements of the molecule, using

- 1) the letter to designate the ionic character;
- 2) the 1st figure to designate the hydrophilic group;
- 3) the 2nd figure to designate the hydrophobic group;
- 4) the 3rd figure to designate an intermediate functional group;
- 5) the 4th figure to designate a supplementary property of the hydrophilic group;
- 6) the 5th figure (in parentheses between the 1st and 2nd) to designate the second hydrophilic group of compounds comprising several hydrophilic groups of different ionic characters.

The operation is carried out by determining, from the classification Table given in the Annex arising from the general scientific classification, the figures which correspond to the groups present in the molecule, by the application of the rules defined in section 3.

3 RULES OF CLASSIFICATION

3.1 Choice of the hydrophilic group

Rule 1

The hydrophilic group is the point of departure for the classification. Its ionic character shall be designated by one of the following letters :

- A for anionic hydrophilic groups;
- C for cationic hydrophilic groups;
- N for non-ionic hydrophilic groups;
- Z for true ampholytic compounds.

Rule 2

In the presence of several hydrophilic groups with identical ionic characters, select as the principal hydrophilic group that which is designated first in the following numbering order, with reference to the divisions in the Table in the Annex :

for groups which are

- anionic : 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 1
- cationic : 5 – 6 – 7 – 8 – 9 – 1 – 2 – 3 – 4
- non-ionic : 3 – 4 – 5 – 6 – 1 – 2 – 7 – 8 – 9

Rule 3

In the presence of several hydrophilic groups with different ionic characters, two alternatives must be considered :

- a) in the presence of anionic and cationic groups (ampholytic compounds), use the letter Z. Designate the cationic group first and the anionic group second, in parentheses, applying Rule 2 if necessary;
- b) in the presence of an ionic group and a non-ionic group, use as the letter that which characterises the ionic group. Designate this first and the non-ionic group second, in parentheses, applying Rule 2 if necessary.

3.2 Choice of the hydrophobic group

Rule 4

The determinant hydrophobic group is the most important radical for the hydrophobic behaviour; in general, it is usually the longest hydrocarbon chain (including rings), as far removed as possible from the principal hydrophilic group.

Rule 5

An aliphatic hydrocarbon chain shall be regarded as sufficiently long, in the terms of Rule 4, if it consists of at least 8 carbon atoms.

Rule 6

If the surface active agent does not contain a hydrocarbon chain with at least 8 carbon atoms, take a cyclic residue as the determinant hydrophobic group.