

ICS 13.300

CCS A 80



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 42212-2022

**Nanomaterials - Preparation of material safety data
sheet(MSDS)**

Issued on: December 30, 2022

Implemented on: July 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface	
Introduction	
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1

foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules for Standardization Documents" drafting.

This document is equivalent to ISO /T R13329.2012 "Establishment of Nanomaterial Material Safety Data Sheet (MSDS)", document category

The type is adjusted from the ISO technical report to the national standard of our country.

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

This document was proposed by the Chinese Academy of Sciences.

This document is under the jurisdiction of the National Nanotechnology Standardization Technical Committee (SAC/TC279).

Introduction

This document provides guidance for establishing Safety Data Sheets (SDS) for man-made nanomaterials (and materials or products containing man-made nanomaterials).

Guide, while providing additional information related to the safety of man-made nanomaterials. This document should be used in conjunction with GB/T 16483-2008. Book

The document refers to the document on dangerous goods in the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Safety Data Sheets.

The relevant technical content of GB 13690-2009 is consistent with GHS, classifies the hazards of chemicals, and carries out the publicity of hazards of chemicals.

Regulation.

Currently, hazard information for most nanomaterials is insufficient. Since the toxicological

effects of nanomaterials are not fully understood, and exposure to

Detection is difficult, so in most cases the health risks to workers and potentially exposed populations are unknown. most hazard information

and information exchange systems require the preparation of SDSs for chemicals, including hazardous chemicals containing nanomaterials, during manufacture, storage, transport or other

used in professional activities. However, only a few SDSs contain nanomaterial-specific information or are specific to specific nanomaterials. most

The SDS lacks information on the potential hazards of nanomaterials (see Ref. [78]). Previous studies have shown that compared to bulk (non-nanometer-sized) materials

Some nanomaterials with the same composition are more harmful (such as more biologically active), resulting in greater toxicity. Therefore, SDS needs

Including characterization predictions for the potential safety and toxicity of man-made nanomaterials. While there are currently no legal requirements for

However, since SDS is a recognized and valid method of providing health and safety information in the workplace, it is

It is appropriate to establish an SDS for nanomaterials.

This document considers the precautionary measures of toxicity and other risk factors of nanomaterials, so whether the material is harmful or not, it is recommended as

Nanomaterials and products containing nanomaterials are provided with SDS, unless there is evidence that the material is harmless, or is not harmful during processing or use

Will release nanomaterials, or aggregates and aggregates (NOAA) of the material with a size greater than 100nm.

nanomaterials

Establishment of Material Safety Data Sheet (MSDS)

1 Scope

This document is the safety data sheet for man-made nanomaterials and chemical products containing man-made nanomaterials related to safety, health and

Provide guidance for the establishment of content and consistency of environmental information, and provide supplementary guidance for GB/T 16483-2008 to establish safety data sheets

South, including safety data sheets for man-made nanomaterials and products containing man-made nanomaterials.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document.

GB/T 30544.1-2014 Nanotechnology Terminology Part 1.Core Terms (ISO /T S80004-1.2010, IDT)

GB/T 32269-2015 Terms and definitions of nanotechnology and nanoobjects Nanoparticles, nanofibers and nanosheets (ISO /

TS27687.2008(1), IDT)

United Nations Economic Commission for Europe, GHS.2011 Globally Harmonized System of Classification and Labeling of Chemicals (Globallyharmonized

(1) ISO /T S27687.2008 has been abolished and replaced by ISO /T S80004-2.2015.

3 Terms and Definitions

GB/T 32269-2015, GB/T 30544.1-2014, GHS.2011 and the following terms and definitions apply to this

document.

3.1

Agglomerates agglomerate

An accumulation, aggregate, or mixture of the two of weakly bound particles, whose external area is similar to the sum of the surface areas of its individual particles.

NOTE 1.The forces supporting the aggregates are all weak forces, such as van der Waals forces or simple physical entanglements.

Note 2.Agglomerates are also referred to as secondary particles, while source particles are referred to as primary particles.

[Source. GB/T 32269-2015, 3.2]

3.2

Aggregate

New particles formed from strongly bound or fused particles may have an external surface

area significantly smaller than the sum of the individual particle surface areas.

Note 1. The forces supporting the aggregates are all strong forces, such as covalent bonds or originating from sintering or complex physical entanglements.

Note 2. Aggregates are also referred to as secondary particles, while source particles are referred to as primary particles.

[Source. GB/T 32269-2015, 3.3]

3.3

Bioaccumulation bioaccumulation

The process by which a substance accumulates in an organism or a certain part thereof.