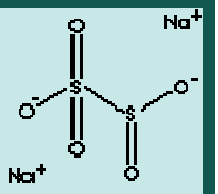
SODIUM METABISULFITE

PRODUCT IDENTIFICATION

CAS NO.	7681-57-4
EINECS NO.	231-673-0
FORMULA	$Na_2S_2O_5$
MOL WT.	190.10
H.S. CODE	
TOXICITY	
SYNONYMS	Dinatriumdisulfit; Disulfito de disodio; Disulfite de disodium; Disodium disulfite; Disodium Salt Pyrosulfurous Acid; Disulfurous acid, disodium salt; Pyrosulfurous acid, disodium salt; Sodium Metabisulfite; Sodium disulfite; Sodium Pyrosulfite;
DERIVATION	
CLASSIFICATION	



PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	white crystalline powder with odor of sulfur dioxide
MELTING POINT	150 C (Decomposes)
BOILING POINT	
SPECIFIC GRAVITY	1.48
SOLUBILITY IN WATER	Freely soluble (470g/l)
pH	3.5 - 5
VAPOR DENSITY	
AUTOIGNITION	
NFPA RATINGS	Health: 1; Flammability: 0; Reactivity: 0
REFRACTIVE INDEX	
FLASH POINT	
STABILITY	Stable under ordinary conditions. Hygroscopic.

GENERAL DESCRIPTION & APPLICATIONS

Sodium Metabisulfite is a white to slightly yellowish crystalline powder with sulfur dioxide odor; readily soluble in water. Sodium metabisulfite containing more than 65.0% SO_2 w/w releases sulfur dioxide gas when mixed with water. It forms a bisulfite adduct with aldehyde and with ketones to a sulfonic acid. It is used to purify or isolate aldehydes and ketones. Sodium metabisulfite's reductive and sulfonating properties provide versatile applications. It is used as an oxygen scavenger to eliminate the dissolved oxygen in waste water and in pipes. Bisulfite is a reductive bleaching agent. It reduces carbonyl and alcohol groups, which function as colorants of the substances. It is used in bleaching mechanical paper pulp, cotton, wool and kaolin clay. Additional applications include as a preservative (antioxidant), a hair waving agent, and Ensiling agent. Bisulfites are used in industries concerned with leather processing, food and beverageprocessing, gas purification, water treatment to remove excess chlorine, textiles and pulp processing, and many others. It is used as a reducing agent in chemical manufacturing. It is an alternative to sulfur dioxide which is used in sterlization of equipment.

Examples of other metallic bisulfite

- Calcium Bisulfite [13780-03-5, $Ca(HSO_3)_2$] A white powder, used as an antiseptic and in pulping process.
- Potassium Bisulfite [1310-61-8, $KHSO_3$] Also called potassium acid sulfite, white, water-soluble powder with sulfur dioxide odor; insoluble in alcohol; decomposes when heated; used as an antiseptic and reducing chemical, tanning, and bleaching.

- Magnesium Bisulfite [13774-25-9, $Mg(HSO_3)_2$]

SALES SPECIFICATION	
TECH GRADE	
APPEARANCE	White to slightly yellowish crystalline powder
CONTENT	98.0% min
SO_2	65.0% min
$Na_2S_2O_4$	2.0% max
INSOLUBLES IN WATER	0.05% max
PARTICLE SIZE	85% (mesh 200)
pH	4 -4.6
Fe	5ppm max
FOOD GRADE	
APPEARANCE	White to slightly yellowish crystalline powder
CONTENT	98.0% min
SO_2	65.0% min
$Na_2S_2O_4$	2.0% max
INSOLUBLES IN WATER	0.05% max
PARTICLE SIZE	85% (mesh 200)
HEAVY METALS	10ppm max
As	1ppm max
Fe	5ppm max
pH	4.5 - 5.5
TRANSPORTATION	
PACKING HAZARD CLASS UN NO.	25kgs or big bag

EUROPEAN LABELING IN ACCORDANCE WITH EC DIRECTIVES

Hazard Symbols: XN, Risk Phrases: 22-31-41, Safety Phrases: 26-39-46

BISULFITE ADDUCTS WITH ALDEHYDE GROUPS

Acetone Sodium Bisulfite: [CAS RN: 540-92-1, $(CH_3)_2C(OH)SO_3Na$] Crystals that have a slight sulfur dioxide odor and slightly fatty feel; freely soluble in water, decomposed by acids; used in textile dyeing and printing.

Sodium Formaldehyde Bisulfite [CAS RN: 870-72-4 CH_3NaO_4S] A compound used as a fixing agent for fibers containing keratin, in metallurgy for flotation of lead-zinc ores, and in photography

Indole-3-acetaldehyde Sodium Bisulfite [CAS RN: 20095-27-6, $C_{10}H_9NO \cdot NaHSO_3$]

Glutaraldehyde bis(sodium bisulfite) [CAS RN: 7420-89-5, $C_5H_{12}O_8S_2$] used as an antiseptic

Menadione Sodium Bisulfite [CAS RN: 57414-02-5, $C_{11}H_9NaO_5S$] a water-soluble derivative of menadione provitamin which converted in the body to active vitamin K.

Glyoxal sodium bisulfite [CAS RN: 332360-05-1, $[CH(OH)SO_3Na]_2$] nonaqueous form of glyoxal

OTHER INFORMATION

Sulfate (also spelled sulphate in Europe) is any chemical compound containing the SO_4^{2-} ion related to sulfuric acid (H_2SO_4). Sulfates are salts or esters of sulfuric acid, formed by replacing one or both of the hydrogens with a metal or a radical as in sodium sulfate, Na_2SO_4. Sulfates in which both hydrogens are replaced are called normal sulfates. Bisulfate is a compound that has the HSO_4^-

radical. Bisulfate (called also hydrogen sulfate or acid sulfate) is a compound formed by replacing only one hydrogen in sulfuric acid. Sulfite (also sulphite) is a compound that contain the sulfite ion SO_3^{2-}. Sulfites are salts or esters of sulfurous acid (H_2SO_3), formed by replacing one or both of the hydrogens with a metal or a radical as in sodium sulfite, Na_2SO_3. Sulfites in which both hydrogens are replaced are called normal sulfites. Bisulfite is a compound that has the HSO_3^- radical. Bisulfate (called also hydrogen sulfite or acid sulfite) is a compound formed by replacing only one hydrogen in sulfurous acid. The term of 'meta' or 'pyro' is the chemical prefix for oxo acid formed through the loss of one water molecule (dehydration) from two molecules of ortho acid by heating. Pyrosulfuric acid is an example ($2H_2SO_4 - H_2O = H_2S_2O_7$). Ortho acid is the compound fully hydrated acid or its salts. Orthophosphoric acid is an example ($2 \cdot H_3PO_4 = P_2O_5 \cdot 3H_2O$), in contrast to the less hydrated form, pyrophosphoric acid ($2 \cdot HPO_3 = P_2O_5 \cdot H_2O$). $Na_2O_5S_2$ is called sodium metabisulfite ($2 \cdot HNaO_3S - H_2O$). Sulfide is a compound having one or more sulfur atoms in which the sulfur is connected directly to a carbon, metal, or other nonoxygen atom; for example sodium sulfide, Na_2S. Sulfide ion is S^{2-} with oxidation number -2. Bisulfide ion is an anion formed by two sulfur atoms having an overall -2 charge, $(S_2)^{2-}$. Sulfamate is a salt of sulfamic acid (HSO_3NH_2). Calcium sulfamate $Ca(SO_3NH_2)_2$ is an example.