

Eriochrome Black T



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IDENTIFICATION

Eriochrome Black T

Sodium 3-hydroxy-4-[(1-hydroxy-2-naphthyl)azo]-7-nitronaphthalene-1-sulfonate
C.I. 14645

ZVG No: 110927
CAS No: 1787-61-7
EC No: 217-250-3

CHARACTERISATION

SUBSTANCE GROUP CODE

122200 Sodium compounds
147610 Sulphonates (salts)
145110 Nitro compounds, aromatic (nitro group on the ring)
145600 Azo compounds and diazo compounds
142141 Naphthols, substituted

STATE OF AGGREGATION

The substance is solid.

PROPERTIES

powder
black
odourless

CHEMICAL CHARACTERISATION

Combustible substance, poorly flammable.
Soluble in water.
Acute or chronic health hazards result from the substance.
The substance is hazardous to the aquatic environment.
(see: chapter REGULATIONS).

[Substance information in Wikipedia](#)

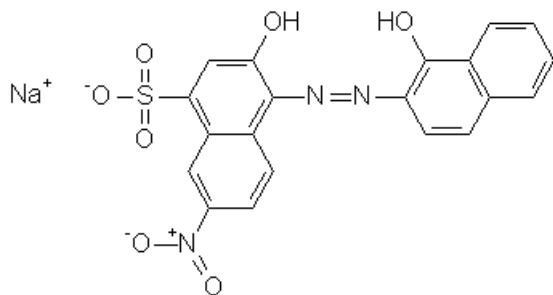
DUST EXPLOSIVENESS

Hints on the possibility of a dust explosion are not given for this substance. Nevertheless, finely dispersed combustible solids in a whirled up state always have to be considered as a subject of dust explosion.

Quelle: [01211](#)

FORMULA

$C_{20}H_{12}N_3NaO_7S$



Molar mass: 461,38 g/mol

PHYSICAL AND CHEMICAL PROPERTIES

Solubility |
pH-value

SOLUBILITY IN WATER

Concentration: 50 g/l

Temperature: 20 °C

Reference: [01211](#)

pH-VALUE

pH-value: ca. 3,7

Temperature: 20 °C

Concentration: 10 g/l

Reference: [01211](#)

OCCUPATIONAL HEALTH AND FIRST AID

Occupational health check

OCCUPATIONAL HEALTH CHECK

Prophylaxis offer: Occupational medical prevention has to be offered when, conducting activities with this substance, an exposure cannot be excluded.

Obligatory prophylaxis: The employer shall arrange occupational medical prophylaxis if, exerting activities with this substance, skin contact cannot be excluded.

Deadlines: Employees may exert activities with this substance only after participation in obligatory prophylaxis. Prophylaxis offer has to be made prior to taking up work. Deadlines for the inducement or proposal of regularly recurrent occupational medical prevention are to gather from the Occupational Health Rule (Arbeitsmedizinische Regel) "[AMR Nummer 2.1](#)".

SAFE HANDLING

[Handling](#) | [Storage](#) | [Fire and explosion protection](#) | [Organisational measures](#) | [Personal protection](#) | [Disposal considerations](#) | [Accidental release measures](#) | [Fire fighting measures](#)

TECHNICAL MEASURES - HANDLING

Workplace

Select ventilation measures according to the other used substances.

If there is a chance that dusts may be released, then the work room must provide adequate ventilation.

The floor should not have a floor drain.

Washing facility at the workplace required.

Eye bath required. These locations must be signposted clearly.

Equipment

Use closed apparatus if possible.

If release of the substance cannot be prevented, then it should be suctioned off at the point of exit.

Consider emission limit values, a purification of waste gases if necessary.

Label containers and pipelines clearly.

Advice on safer handling

Take care to maintain clean working place.

Do not leave container open.

Sufficient ventilation must be guaranteed for refilling, transfer, or open use.

Avoid spillage.

Fill only into labelled container.

Avoid rising dust.

Use an appropriate exterior vessel when transporting in fragile containers.

Cleaning and maintenance

Use protective equipment while cleaning if necessary.

Avoid dust formation. Dust formation that cannot be avoided must be collected regularly.

Use a tested industrial vacuum cleaner or suction device.

Do not raise dust while cleaning.

Use of a blower for cleaning is not permitted.

TECHNICAL MEASURES - STORAGE

Storage

Do not use any food containers - risk of mistake.

Containers have to be labelled clearly and permanently.

Store in the original container as much as possible.

Keep container tightly closed.

Recommended storage at room temperature.

Store in a dry place.

Substance is sensitive to light, protect from exposure to light.

Conditions of collocated storage

Storage class 10 - 13 (Other liquids and solids)

Only substances of the same storage class should be stored together.

Collocated storage with the following substances is prohibited:

- Pharmaceuticals, foods, and animal feeds including additives.
- Infectious, radioactive und explosive substances.
- Strongly oxidizing substances of storage class 5.1A.

Under certain conditions the collocated storage with the following sub-stances is permitted (For more details see [TRGS 510](#)):

- Gases.
 - Flammable liquids of storage class 3.
 - Other explosive substances of storage class 4.1A.
 - Pyrophoric substances.
 - Substances liberating flammable gases in contact with water.
 - Oxidizing substances of storage class 5.1B.
 - Ammonium nitrate and preparations containing ammonium nitrate.
 - Organic peroxides and self reactive substances.
 - Combustible and non combustible acutely toxic substances of storage classes 6.1A and 6.1B.
- The substance should not be stored with substances with which hazardous chemical reactions are possible.

TECHNICAL MEASURES - FIRE AND EXPLOSION PROTECTION**Technical, constructive measures**

Substance is combustible.

Fire fighting equipment must be available.

ORGANISATIONAL MEASURES

Instruction on the hazards and the protective measures using instruction manual ([TRGS 555](#)) are required with signature if just more than one minor hazard was detected.

Instruction must be provided before employment and then at a minimum of once per annum thereafter.

Observe the restrictions on juvenile employment as defined in the "Jugendarbeitsschutzgesetz".

PERSONAL PROTECTION**Body protection**

Wear an apron or a lab coat.

Respiratory protection

In an emergency (e.g.: unintentional release of the substance) respiratory protection must be worn. Consider the maximum period for wear.

Respiratory protection: Particle filter P1, colour code white.

Eye protection

Sufficient eye protection must be worn.

Wear glasses with side protection.

Hand protection

The use of resistant protective gloves is recommended.

Skin protection cremes do not protect as effectively against the substance as protective gloves. Therefore suitable protective gloves should be preferred as far as possible.

Currently there is no information available regarding suitable glove materials.

Experience says that polychloroprene, nitrile rubber, butyl rubber, fluoro-caoutchouc, and polyvinyl chloride are suitable as glove materials for protection against un-dissolved solids.

Occupational hygiene

Take heed of usual occupational hygiene measures when handling chemical substances, especially wash the skin with soap and water before breaks and at the end of work and apply fatty skin-care products after washing.

Avoid contact with eyes. In case of contact rinse the affected eye(s).

DISPOSAL CONSIDERATIONS

Hazardous waste according to Waste Catalogue Ordinance (AVV).

If there is no way of recycling it must be disposed of in compliance with the respective national and local regulations.

Collection of small amounts of substance:

Do not put/place waste into sink or dust bin.

Collect in container for solid organic residues.

Collection vessels must be clearly labelled with a systematic description of their contents. Store the vessels in a well-ventilated location. Entrust them to the appropriate authorities for disposal.

ACCIDENTAL RELEASE MEASURES

Wear personal protective equipment (see chapter Personal Protection).

Pick up without creating dust.

Afterwards ventilate area and wash spill site.

Endangerment of watert:

Distinct hazard to waters. Prevent penetration into water, drainage, sewer, or the ground. Inform the responsible authorities about penetration of larger quantities.

FIRE FIGHTING MEASURES

Suitable extinguishing media

Water (spray - not splash)

Dry extinguishing powder

Foam

Carbon dioxide

Instructions

If possible, take container out of dangerous zone.

Shut off sources of ignition.

Do not allow runoff to get into the sewage system.

Special protective equipment

In the case of a fire hazardous substances can be released.

Nitrous gases (nitric oxides)

Sulfur oxides

Carbon monoxide and carbon dioxide

Metal oxide fume

Wear self-contained breathing apparatus and special tightly sealed suit.

REGULATIONS

[GHS Classification/Labelling](#) | [Workplace labelling](#) | [Water hazard class](#) | [Air quality control](#) | [Transport Regulations](#) | [SevesoIII](#) | [Technical rules](#) | [Regulations of accident insurers](#) | [Occupational health check](#)

EUROPEAN GHS CLASSIFICATION AND LABELLING

Classification

Eye irritation, Category 2; H319

Hazardous to the aquatic environment, Chronic Category 2; H411



Signal Word "Warning"

Hazard Statement - H-phrases

H319: Causes serious eye irritation.

H411: Toxic to aquatic life with long lasting effects.

Precautionary Statement - P-phrases

P264: Wash skin thoroughly after handling.

P273: Avoid release to the environment.

P280: Wear eye protection/face protection.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P391: Collect spillage.

Manufacturer's specification by Merck

Reference: [01211](#)

State: 2021

Checked: 2021

GHS-CLASSIFICATION OF MIXTURES

The classification of mixtures containing this substance results from Annex 1 of Regulation (EC) 1272/2008.

Reference: [99999](#)

WORKPLACE LABELLING ACCORDING TO GERMAN [ASR A1.3](#)

Precept label



Use safety goggles

GERMAN WATER HAZARD CLASS

Substance No: 3437

WGK 2 - distinct hazard to waters

Classification according to the announcement of the list of substances hazardous to water in the Federal Register of 10.08.2017, last update 24.11.2023

TECHNICAL INSTRUCTIONS ON AIR QUALITY CONTROL ([TA LUFT](#))

Chapter 5.2.5 Organic Substances, dust

To be treated as overall dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:

Mass flow: 0,20 kg/hr

or

Mass conc.: 20 mg/m³

The mass per unit volume of 0,15 g/m³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0,20 kg/h.

TRANSPORT REGULATIONS

UN Number: 3077

Shipping name: Environmentally hazardous substances, solid, n.o.s.

Hazard Identification Number: 90

Class: 9 (Miscellaneous items and materials)

Packing Group: III (low danger)

Danger Label: 9



Special labelling: Symbol (fish and tree)



Classification code: M7

Tunnel restrictions:

Passage allowed through all tunnels.

Reference: 01211

DIRECTIVE 2012/18/EU (Seveso III)

The substance is subject to the hazard categories of the Hazardous Incident Ordinance:

E2 Hazardous to the aquatic environment, Category Chronic 2

Quantity thresholds for determination of operation scopes:

Annex I Part 1 Section: E2

Hazardous to the aquatic environment

Qualifying quantity for the application of

Lower-tier requirements: 200 t

Upper-tier requirements: 500 t

TECHNICAL RULES FOR HAZARDOUS SUBSTANCES

[TRGS 201](#)

Einstufung und Kennzeichnung bei Tätigkeiten mit Gefahrstoffen; Ausgabe Februar 2017, zuletzt geändert und ergänzt April 2018

[TRGS 400](#)

Gefährdungsbeurteilung für Tätigkeiten mit Gefahrstoffen; Ausgabe Juli 2017

[TRGS 555](#)

Betriebsanweisung und Information der Beschäftigten; Ausgabe Februar 2017

[TRGS 600](#)

Substitution; Ausgabe Juli 2020

[TRGS 500](#)

Schutzmaßnahmen; Ausgabe September 2019

[TRGS 509](#)

Lagern von flüssigen und festen Gefahrstoffen in ortsfesten Behältern sowie Füll- und Entleerstellen für ortsbewegliche Behälter; Ausgabe Juni 2022

[TRGS 510](#)

Lagerung von Gefahrstoffen in ortsbeweglichen Behältern; Ausgabe Januar Dezember 2020

[TRGS 800](#)

Brandschutzmaßnahmen; Ausgabe Dezember 2010

REGULATIONS OF GERMAN ACCIDENT INSURERS

DGUV Guideline 350-001 (BGG 904): Guidelines for occupational medical examinations
G 33 : Aromatic nitro and amino compounds

LINKS

[DGUV Information 213-098: List of substances - lesson in schools \(in German only\)](#)

REFERENCES

Quelle: 00001

IFA: Erfassungs- und Pflegehandbuch der GESTIS-Stoffdatenbank (nicht öffentlich)

Data acquisition and maintenance manual of the GESTIS substance database (non-public)

Quelle: 01211

GHS-Sicherheitsdatenblatt, Merck

GHS Material Safety Data Sheet, Merck

Quelle: 01221

GHS-Sicherheitsdatenblatt, Sigma-Aldrich

GHS Material Safety Data Sheet, Sigma-Aldrich

Quelle: 01231

GHS-Sicherheitsdatenblatt, Thermo Fisher Scientific

GHS Material Safety Data Sheet, Thermo Fisher Scientific

Quelle: 05300

[TRGS 510](#) "Lagerung von Gefahrstoffen in ortsbeweglichen Behältern" Ausgabe Dezember 2020

Quelle: 07580

Bekanntmachung der Liste der wassergefährdenden Stoffe im Bundesanzeiger vom 10.08.2017, zuletzt geändert 24.11.2023

Quelle: 99999

Angabe des Bearbeiters

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