
Safety Data Sheet**1. Chemical product and company identification****Product name** : Neutral red-bromothymol blue mixture solution**SDS code** : J6-02**Company/undertaking identification** :

HAYASHI PURE CHEMICAL IND.,LTD.

Address : 3-2-12 Uchihiranomachi, Chuo-ku, Osaka, Osaka, Japan

Telephone : 06-6910-7305

E-mail : shiyaku_kikaku@hpc-j.co.jp

URL : <https://www.hpc-j.co.jp/>**Emergency number** : 06-6910-7305**Recommended use** : For research and experimental use only.**Restrictions on use** : Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc.**2. Hazards identification****GHS classification**

| | | | |
|--|--|---------------------------------|-----------------------------|
| Physical hazards | Explosives | classification not possible | |
| | Flammable gases | No classification | |
| | Aerosol | classification not possible | |
| | Oxidizing gases | No classification | |
| | Gases under pressure | No classification | |
| | Flammable liquids | Category 2 | |
| | Flammable solids | No classification | |
| | Self-reactive substances and mixtures | classification not possible | |
| | Pyrophoric liquids | classification not possible | |
| | Pyrophoric solids | No classification | |
| | Self-heating substances and mixtures | classification not possible | |
| | Substances and mixtures which in contact with water emit flammable gases | classification not possible | |
| | Oxidizing liquids | classification not possible | |
| | Oxidizing solids | No classification | |
| | Organic peroxides | classification not possible | |
| | Corrosive to metals | classification not possible | |
| | Desensitized explosives | classification not possible | |
| | Health hazards | Acute toxicity (oral) | classification not possible |
| | | Acute toxicity (dermal) | classification not possible |
| | | Acute toxicity (inhalation:gas) | classification not possible |
| Acute toxicity (inhalation:vapors) | | No classification | |
| Acute toxicity (inhalation:dust/mist) | | classification not possible | |
| Skin corrosion/irritation | | classification not possible | |
| Serious eye damage/eye irritation | | Category 2B | |
| Respiratory sensitization | | classification not possible | |
| Skin sensitization | | classification not possible | |
| Germ cell mutagenicity | | classification not possible | |
| Carcinogenicity | Category 1A | | |
| Reproductive toxicity | Category 1A | | |
| Specific target organ toxicity (single exposure) | Category 3 (Narcosis) | | |

| | | |
|-----------------------|---|--|
| | Specific target organ toxicity (single exposure) | Category 3 (Respiratory tract irritation.) |
| | Specific target organ toxicity (repeated exposure) | Category 1 (liver) |
| | Specific target organ toxicity (repeated exposure) | Category 2 (central nervous system) |
| Environmental hazards | Aspiration hazard | classification not possible |
| | Hazardous to the aquatic environment, short-term (acute) | classification not possible |
| | Hazardous to the aquatic environment, long-term (chronic) | classification not possible |
| | Hazardous to the ozone layer | classification not possible |

Hazard pictograms (GHS JP)



GHS02



GHS07



GHS08

Signal word (GHS JP)

: Danger

Hazard statements (GHS JP)

: Highly flammable liquid and vapor (H225)
 Causes eye irritation (H320)
 May cause respiratory irritation (H335)
 May cause drowsiness or dizziness (H336)
 May cause cancer (H350)
 May damage fertility or the unborn child (H360)
 Causes damage to organs (liver) through prolonged or repeated exposure (H372)
 May cause damage to organs (central nervous system) through prolonged or repeated exposure (H373)

Precautionary statements (GHS JP)

Prevention

: Obtain special instructions before use. (P201)
 Do not handle until all safety precautions have been read and understood. (P202)
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210)
 Ground and bond container and receiving equipment. (P240)
 Use explosion-proof electrical/ventilating/lighting equipment. (P241)
 Use only non-sparking tools. (P242)
 Take action to prevent static discharges. (P243)
 Do not breathe dust/fume/gas/mist/vapors/spray. (P260)
 Wash hands, forearms and face thoroughly after handling. (P264)
 Do not eat, drink or smoke when using this product. (P270)
 Use only outdoors or in a well-ventilated area. (P271)
 Wear protective gloves/protective clothing/eye protection/face protection. (P280)

Response

: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. (P303+P361+P353)
 IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340)
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338)
 IF exposed or concerned: Get medical advice/attention. (P308+P313)
 Get medical advice/attention if you feel unwell. (P314)
 If eye irritation persists: Get medical advice/attention. (P337+P313)
 In case of fire: Use specify appropriate media to extinguish. (P370+P378)

Storage

: Store in a well-ventilated place. Keep container tightly closed. (P403+P233)
 Store in a well-ventilated place. Keep cool. (P403+P235)
 Store locked up. (P405)

Disposal

: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

3. Composition/information on ingredients

Distinction of substance or mixture : Mixture

| Name | Concentration or Concentration range | Formula | Kanpo number | | CAS RN |
|------------------|--------------------------------------|--------------|--------------|-----------------------------|-----------|
| | | | CSCL no | ISHL no | |
| Neutral red | About 0.06% | C15H17CIN4 | - | - | 553-24-2 |
| Bromothymol blue | About 0.06% | C27H28Br2O5S | - | - | 76-59-5 |
| Ethanol | About 86% | C2H5OH | (2)-202 | Existing Chemical Substance | 64-17-5 |
| Water | About 13.88% | H2O | - | - | 7732-18-5 |

The above concentration or concentration range are not product specification.
All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

4. First aid measures

First aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
Get immediate medical advice/attention.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing.
Gently wash with plenty of soap and water.
Get immediate medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get immediate medical advice/attention.
- First-aid measures after ingestion : Do NOT induce vomiting.
Rinse mouth.
Get immediate medical advice/attention.

5. Fire fighting measures

- Suitable extinguishing media : Water spray, Alcohol-resistant foam, Dry powder, Carbon dioxide, Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.
- Fire hazard : Extremely flammable liquid and vapor.
- Explosion hazard : Danger of the steam explosion in indoor, outdoor, sewer.
May induce explosion of containers by heating.
- Hazardous decomposition products in case of fire : In case of fire, product may produce irritative or toxic fumes/gases.
- Firefighting instructions : If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers.
In the case of peripheral fire, quickly remove movable containers to safe places.
If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool.
Even after extinguishing fire, thoroughly cool containers by using plenty of water.
- Protection during firefighting : Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Before entering, ventilate the area.
Do not let unauthorized persons come close to the area.
Immediately place the leakage area in isolation, with taking proper distances for all directions.
Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.

Environmental precautions

Environmental precautions : Avoid release to the environment.
Prevent entry to sewers and public waters.

Methods and Equipment for Containment and Cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it.
Collect leaking and spilled liquid in sealable containers as far as possible.
Wash out the spilled area with large amounts of water.

7. Handling and storage**Handling**

Technical measures : Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing.
Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.

Precautions for safe handling : Do not eat, drink or smoke when using this product.
Thoroughly wash your hands and gargle after handling.
Ensure good ventilation of the work station.
Do not contact, breathe or swallow.
Take precautionary measures against static discharge.
Use explosion-proof equipment.

Prevents handling of incompatible substances or mixtures : Avoid prolonged or repeated exposure.

Storage

Storage conditions : Store locked up.
Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources.

Material used in packaging/containers : Light shielding airtight container.

Technical measures : Comply with applicable regulations.

Storage temperature : Cool and dark place

8. Exposure controls / Personal protection equipment

| Exposure limit values | |
|-------------------------|---------------------|
| Ethanol | |
| Exposure limits (ACGIH) | TWA -,STEL 1000 ppm |

Appropriate engineering controls : Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location.

Protective equipment

Respiratory protection : Gas mask for organic gases

Hand protection : Impervious protective gloves

Eye protection : Protective glasses (general glasses, glasses with side-shields, goggles)

Skin and body protection : Impervious aprons, Impervious work clothing, Impervious long boots

9. Physical and chemical properties

Physical state : Liquid

Appearance : Liquid

Color : red

Odor : characteristic odor

pH : 2.9 (25°C)

Melting point : No data available

Freezing point : No data available

Boiling point : 78.3 °C (as ethanol)

Flash point : 12.8 °C (as ethanol)

Auto-ignition temperature : No data available

| | |
|---|---------------------------------|
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapor pressure | : No data available |
| Relative density | : No data available |
| Density | : 0.79 g/cm ³ (20°C) |
| Relative gas density | : No data available |
| Solubility | : No data available |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Explosive limits (vol %) | : No data available |
| Viscosity, kinematic | : No data available |
| Particle characteristics | : No data available |

10. Stability and reactivity

| | |
|------------------------------------|---|
| Reactivity | : No data available |
| Chemical stability | : Stable under normal handling conditions. Shows hygroscopicity. |
| Possibility of hazardous reactions | : Reacts with strong oxidizing agents, causing fire and explosion hazard. |
| Conditions to avoid | : Sunlight, moisture, heat. Ignition sources such as sparks, flames and static electricity. Contact with strong oxidizing agents. |
| Incompatible materials | : Strong oxidizing agents |
| Hazardous decomposition products | : Nitrogen oxides, Sulfur oxides, Chlorine compounds, Bromine compounds |

11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

| As a product | |
|---------------------------------------|---|
| Acute toxicity (oral) | classification not possible |
| Acute toxicity (dermal) | classification not possible |
| Acute toxicity (inhalation) | vapors:No classification Gases:classification not possible dust, mist:classification not possible |
| Skin corrosion/irritation | classification not possible |
| Serious eye damage/irritation | Category 2B |
| Respiratory sensitization | classification not possible |
| Skin sensitization | classification not possible |
| Germ cell mutagenicity | classification not possible |
| Carcinogenicity | Category 1A |
| Reproductive toxicity | Category 1A |
| STOT-single exposure | Category 3 (Narcosis) Category 3 (Respiratory tract irritation.) |
| STOT-repeated exposure | Category 1 Category 2 |
| Aspiration hazard | classification not possible |
| Neutral red | |
| Acute toxicity (oral) | No data available |
| Acute toxicity (dermal) | No data available |
| Acute toxicity (gas) | No data available |
| Acute toxicity (vapour) | No data available |
| Acute toxicity (inhalation:dust/mist) | No data available |
| Skin corrosion/irritation | No data available |
| Serious eye damage/irritation | No data available |
| Respiratory sensitization | No data available |
| Skin sensitization | No data available |
| Germ cell mutagenicity | No data available |
| Carcinogenicity | No data available |
| Reproductive toxicity | No data available |
| STOT-single exposure | No data available |
| STOT-repeated exposure | No data available |
| Aspiration hazard | No data available |

| Bromothymol blue | |
|---------------------------------------|--|
| Acute toxicity (oral) | classification not possible |
| Acute toxicity (dermal) | classification not possible |
| Acute toxicity (gas) | classification not possible |
| Acute toxicity (vapour) | No classification |
| Acute toxicity (inhalation:dust/mist) | classification not possible |
| Skin corrosion/irritation | classification not possible |
| Serious eye damage/irritation | classification not possible |
| Respiratory sensitization | classification not possible |
| Skin sensitization | classification not possible |
| Germ cell mutagenicity | classification not possible |
| Carcinogenicity | classification not possible |
| Reproductive toxicity | classification not possible |
| STOT-single exposure | classification not possible |
| STOT-repeated exposure | classification not possible |
| Aspiration hazard | classification not possible |
| Ethanol | |
| Acute toxicity (oral) | No classification |
| Acute toxicity (dermal) | No classification |
| Acute toxicity (gas) | No classification |
| Acute toxicity (vapour) | No classification |
| Acute toxicity (inhalation:dust/mist) | classification not possible |
| Skin corrosion/irritation | No classification |
| Serious eye damage/irritation | Category 2B |
| Respiratory sensitization | classification not possible |
| Skin sensitization | classification not possible |
| Germ cell mutagenicity | classification not possible |
| Carcinogenicity | Category 1A |
| Reproductive toxicity | Category 1A |
| STOT-single exposure | Category 3 (Narcosis) Category 3 (Respiratory tract irritation.) |
| STOT-repeated exposure | Category 1 Category 2 |
| Aspiration hazard | classification not possible |
| Water | |
| Acute toxicity (oral) | No classification |
| Acute toxicity (dermal) | No classification |
| Acute toxicity (gas) | No classification |
| Acute toxicity (vapour) | No classification |
| Acute toxicity (inhalation:dust/mist) | No classification |
| Skin corrosion/irritation | No classification |
| Serious eye damage/irritation | No classification |
| Respiratory sensitization | No classification |
| Skin sensitization | No classification |
| Germ cell mutagenicity | No classification |
| Carcinogenicity | No classification |
| Reproductive toxicity | No classification |
| STOT-single exposure | No classification |
| STOT-repeated exposure | No classification |
| Aspiration hazard | No classification |

12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

| As a product | |
|--|-----------------------------|
| Hazardous to the aquatic environment, short-term (acute) | classification not possible |

| As a product | |
|---|-----------------------------|
| Hazardous to the aquatic environment, long-term (chronic) | classification not possible |
| Persistence and degradability | No data available |
| Bioaccumulative potential | No data available |
| Mobility in soil | No data available |
| Ozone | classification not possible |
| Neutral red | |
| Hazardous to Aquatic Environment - Acute Hazard | No data available |
| Hazardous to Aquatic Environment - Chronic Hazard | No data available |
| Persistence and degradability | No data available |
| Bioaccumulative potential | No data available |
| Mobility in soil | No data available |
| Hazardous to the ozone layer | No data available |
| Bromothymol blue | |
| Hazardous to Aquatic Environment - Acute Hazard | classification not possible |
| Hazardous to Aquatic Environment - Chronic Hazard | classification not possible |
| Persistence and degradability | No data available |
| Bioaccumulative potential | No data available |
| Mobility in soil | No data available |
| Hazardous to the ozone layer | classification not possible |
| Ethanol | |
| Hazardous to Aquatic Environment - Acute Hazard | No classification |
| Hazardous to Aquatic Environment - Chronic Hazard | No classification |
| Persistence and degradability | No data available |
| Bioaccumulative potential | No data available |
| Mobility in soil | No data available |
| Hazardous to the ozone layer | classification not possible |
| Water | |
| Hazardous to Aquatic Environment - Acute Hazard | No classification |
| Hazardous to Aquatic Environment - Chronic Hazard | No classification |
| Persistence and degradability | No data available |
| Bioaccumulative potential | No data available |
| Mobility in soil | No data available |
| Hazardous to the ozone layer | classification not possible |

13. Disposal considerations

- Ecology - waste materials : With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.
- Contaminated container and packaging : Empty the packaging completely prior to disposal.
Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

14. Transport information

International Regulations

Transport by sea(IMDG)

- UN-No. (IMDG) : 1993
 Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, N.O.S.
 Packing group (IMDG) : II
 Transport hazard class(es) (IMDG) : 3

| | |
|---------------------------------|------------------|
| Hazard labels (IMDG) | : 3 |
| Class (IMDG) | : 3 |
| Special provision (IMDG) | : 274 |
| Limited quantities (IMDG) | : 1 L |
| Excepted quantities (IMDG) | : E2 |
| Packing instructions (IMDG) | : P001 |
| IBC packing instructions (IMDG) | : IBC02 |
| Tank instructions (IMDG) | : T7 |
| Tank special provisions (IMDG) | : TP1, TP28, TP8 |
| Stowage category (IMDG) | : B |
| MFAG-No | : 127 |

Air transport(IATA)

| | |
|--|----------------------------|
| UN-No. (IATA) | : 1993 |
| Proper Shipping Name (IATA) | : Flammable liquid, n.o.s. |
| Packing group (IATA) | : II |
| Transport hazard class(es) (IATA) | : 3 |
| Hazard labels (IATA) | : 3 |
| Class (IATA) | : 3 |
| PCA Excepted quantities (IATA) | : E2 |
| PCA Limited quantities (IATA) | : Y341 |
| PCA limited quantity max net quantity (IATA) | : 1L |
| PCA packing instructions (IATA) | : 353 |
| PCA max net quantity (IATA) | : 5L |
| CAO packing instructions (IATA) | : 364 |
| CAO max net quantity (IATA) | : 60L |
| Special provision (IATA) | : A3 |
| ERG code (IATA) | : 3H |

Marine pollutant : Not applicable

Regulations in Japan

| | |
|-------------------------------|---|
| Regulatory information by sea | : Conform to the provisions of the Ship Safety Law. |
| Regulatory information by air | : Conform to the provisions of the Civil Aeronautics Law. |
| MFAG-No | : 127 |

Special transport precautions : When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers.

15. Regulatory information**National law**

| | |
|---|---|
| Industrial Safety and Health Law | : Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18 Item 1, Item 2, Attached Table No.9) Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Item 1, Item 2, Attached Table No.9) Ethanol (Ordinance number : 61) Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4) |
| Japanese Poisonous and Deleterious Substances Control Law | : Not applicable |
| Fire Service Law | : Group 4 - Flammable liquids - Alcohols (Law Art.2 Para.7, Attached Table 1, Group 4) |
| Air Pollution Control Law | : Volatile Organic Compounds (Law Art.2 Para.4) (MOE Official Notice to Prefectures) |
| Foreign Exchange and Foreign Trade Control Act | : Export Trade Control Ordinance appendix 1-16 |
| Ship Safety Act | : Flammable liquids (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations) |
| Civil Aeronautics Law | : Flammable liquids (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations) |
| Port Regulation Law | : Flammable liquids (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods) |
| Road Act | : Restriction for Vehicle Traffic (Enforcement Order Art.19-13, Publication of Japan Highway Public Corp.) |
| Waste Management on Public Cleansing Law | : Specially Controlled Industrial Wastes (Act Art.2, para 5, Enforcement Order Art.2-4) |

Japanese Pollutant Release and Transfer Register Law (PRTR Law) : Not applicable

16. Other information

- Data sources : Handbook of 17423 Chemical Products, The Chemical Daily Co, Ltd.
International Chemical Safety Cards.
National Institute of Technology and Evaluation (NITE).
2020 Emergency Response Guidebook (ERG 2020).
- Other information : The SDS is copyrighted material of Hayashi Pure Chemical Ind, Ltd. This Safety Data Sheet is intended to be provided for business operators who handle chemical substance products of the relevant product and is not intended to assure safety in any way. The Safety Data Sheet does not verify all the information on the applicable chemical substance in the present time. With the recognition in that unknown danger constantly exists in the relevant chemical substance, the product shall be used in the principle of self-responsibility of the user with the highest priority to safety from transport and unpacking to disposal. When the relevant chemical substance is used, the user him/herself shall collect safety information and shall investigate laws and regulations at the place, organizations, countries, etc. where the substance is actually used and give the highest priority to them. The Company shall take no responsibility for investigating state and local regulations and the user shall handle this problem on his/her own responsibility. In the event that SDS in Japanese and SDS translated into other languages exist, the document described in Japanese is prior to all other documents whether or not there is any difference in contents, and documents in other languages shall be references.