

Safety Data Sheet

According to Regulation (EC) No 1907/2006 (REACH)



河北星宇化工有限公司
Hebei Xingyu Chemical Co., Ltd.

Revision: 6.0/EN

Trade name: Optical brightener OB-1 (FBA 393)

Revision date: 19/04/2013

Printing date: 19/04/2013

1. IDENTIFICATION OF THE SUBSTANCE/SEPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade Name: Optical brightener OB-1 (FBA 393)

Chemical Name: 2,2'-(vinylendi-p-phenylene)bisbenzoxazole

EC Number: 216-245-3

REACH Registration Number: Not available

REACH Pre-registration Number: 05-2114567901-43-0000

CAS Number: 1533-45-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant identified use: Industrial use: whitening agent for polyester-cotton blend fabric or various kinds of plastics and their products under high temperature.

1.2.2 Uses advised against: There are no known uses of this substance that are specifically advised against.

1.3 Details of the supplier of the safety data sheet

Supplier: Hebei Xingyu Chemical Co., Ltd. (Manufacturer)
Taihua Str. 29, Xinhua District
Shijiazhuang City Hebei province
P.R. China, Postcode 050061
<http://www.xingyuchem.com>

GEELIO Umwelttechnologie GmbH
(Only Representative under REACH)
Hans-Thoma-Strasse 25
D-68163, Mannheim, Germany
<http://www.geelio.com>

Responsible name: Ms. Jacky GUO (XINGYU)
REACH & CLP TEAM (GEELIO)

E-Mail address of person responsible for this SDS: jacky@xingyuchem.com (XINGYU)
reach@geelio.com (GEELIO)

1.4 Emergency telephone number (with hours of operation): +86-311- 85299881 (XINGYU, 9:00 - 17:00, GMT+8)
+49-621-12281887 (GEELIO, 9:00 – 17:00, GMT+1)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 (CLP)

Self-classification: not classified

Hazard Class and Category Code(s)	Hazard Statement Code(s)
Physical-chemical properties None known	-
Health hazards None known	-
Environment hazards None known	-

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2.1.2 Classification according to Directive 67/548/EEC (including amendments)

Self-classification: not classified

Classification

Hazard symbol(s) : -

R-phrases(s): -

2.1.3 For full text of R-phrases and Hazard- and EU hazard-statements: see section 16.

2.2 Label element

2.2.1 Labelling according to Regulation (EC) No 1272/2008 (CLP)

Hazard category	Hazard pictogram	Code
-	No pictogram is used.	-

Hazard statement: -

Signal Word: No signal word is used.

Precautionary statement: P260

2.2.2 Labelling according to Directive 67/548/EEC (including amendments)

Indication of danger: -

R-phrases: -

S-phrases: S22

2.3 Other hazards: No specific information.

2.4 Other information: Full text of H-, P-, R- and S-phrases see section 16.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance/preparation: substance

3.2 Ingredients:

Ingredient name (IUPAC Name): 2,2'-(vinylene-di-p-phenylene)bisbenzoxazole

Index Number in CLP Annex VI: -

Weight % content (or range): 98.5 - 100 % (w/w)

Impurities: Unknown impurity, 0 - 1.5 % (w/w)

Hazard impurities: There are no ingredients present, which, within the current knowledge of the manufacturer and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 General information: As a general rule, in case of doubt or if symptoms persist or you feel unwell, immediately call a POISON CENTER or doctor/physician.

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- | | |
|---|--|
| 4.1.2 In case of inhalation: | Remove victim to fresh air and keep at rest in a position comfortable and well-ventilated for breathing. If not breathing give artificial respiration. If breathing is difficult, give oxygen and get immediate medical attention. |
| 4.1.3 In case of skin contact: | After contact with skin, wash immediately with plenty of water and soap. Get medical attention if symptoms occur. |
| 4.1.4 In case of eye contact: | Check and remove contact lenses, if present and easy to do. Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open. Consult an eye specialist in case of eye irritation. |
| 4.1.5 In case of ingestion: | Do not induce vomiting. If vomiting occurs naturally, have casualty lean forward to reduce the risk of aspiration. Give nothing by mouth in cases of unconsciousness or convulsion. Get medical attention immediately and show the container or label. |
| 4.1.6 In case of body contact: | Remove contaminated clothing. Wash contaminated clothing before reusing. |
| 4.1.7 Self-protection of the first aider: | No action shall be taken involving any personal risk or without suitable training. |
| 4.1.8 Notes to physician: | Treat symptomatically. |
| 4.2 Most important symptoms and effects, both acute and delayed: | No specific information. |
| 4.3 Indication of any immediate medical attention and special treatment needed: | No specific information. |

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

5.1.1 Suitable extinguishing media: Carbon dioxide (CO₂), dry powder, foam, water fog

5.1.2 Extinguishing media which must not be used for safety reason: No specific information.

5.2 Special hazards arising from the substance or mixture: Contaminated fire water from fire hoses, sprinkler systems, etc., not enter to water, sewer or into ground water in the flush. To ensure adequate facility for fire water retention. Disposal of contaminated water and soil according to local regulations.
Hazardous combustion products: Burning may produce toxic combustion products, such as carbon dioxide, carbon monoxide and oxides of nitrogen etc. Dusty conditions may ignite explosively in the presence of an ignition source causing flash fire. The substance can form an explosive dust / air mixture. For further information see section 7.

5.3 Advice for firefighters: Wear self-contained breathing apparatus and chemical-protective clothing.

5.4 Hazard decomposition products: Harmful vapours. Evolution of fumes/fog. The substance mentioned can be released in case of fire.

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6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering.
Do not breathe vapours/dusts. Avoid dust formation. Remove all sources of ignition. Avoid contact with skin, eyes and clothing.
- 6.1.1 For non-emergency personnel: The wearing of suitable protective equipment (including personal protective equipment referred to under section 8) to prevent any contamination of skin, eyes and personal clothing; removal of ignition sources, provision of sufficient ventilation, control of dust; emergency procedures such as the need to evacuate the danger area or to consult an expert.
- 6.1.2. For emergency responders: Suitable fabric for personal protective clothing, such as Butylene.
- 6.2 Environmental precautions: Do not flush into surface water, sanitary sewer or ground water system. Local authorities should be advised if significant spillages cannot be contained.
- 6.3 Methods and material for containment and cleaning up: Avoid raising dust.
For small amount: pick up with suitable appliance and dispose of.
For large amounts: contain with dust binding material and dispose of.
Remove unnecessary people. Pick up with inert absorbent material (e.g. sand, earth etc.). Place into approved waste containers. Wear suitable protective equipment. Should not be released into the environment. Collect the spilled product into suitable containers which must be tightly sealed and properly labelled.
- 6.4 Reference to other sections: See sections 8 and 13.

7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling: As a general rule,
 - not to eat, drink and smoke in work areas ;
 - to wash hands after use and;
 - to remove contaminated clothing and protective equipment before entering eating areas.

Handling requirement: as with all industrial chemicals, use good industrial practices when handling. Avoid eye, skin and clothing contact. Do not inhale. Do not taste or swallow. Use only with adequate ventilation. Breathing must be protected when large quantities are decanted without local exhaust ventilation. Closed containers should only be opened in well-ventilated areas.

Fire and explosion hazard: When mixed with air and exposed to an ignition source, sufficient dust may become an explosion hazard. Use good housekeeping practices to avoid rendering dust airborne and prevent electrostatic charge formation during transfer and use of this chemical. Ensure that all equipment and containers are adequately grounded. Vapours generated from overheating/decomposition may be flammable and may cause fire/explosion if source of ignition is present. Protection against fire and explosion.

Protection against fire and explosion: Combustible powder. Avoid creating dusty conditions. Grounding is required when emptying into a conductive container. When flammable solvents are present, the container must be inerted or the system otherwise designed to prevent or contain an explosion. Seek expert advice. In addition, for products packaged in fused-line (coated) fiberdrums, fiber drums with conductive liners, steel drums, steel pails and Type "C" FIBC (bulk bags) or other conductive the following instructions also apply: always ground this package before emptying. The user is responsible for

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designing the system to handle solid and ensuring proper training of employees in the system's use.

Condition and materials to avoid: Direct sunlight, excessive light, moisture, oxidizing conditions, excessively high temperatures, sparks and open flame, dusting conditions.

7.2 Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry, cool and well-ventilated place against strong oxidizers when not in use and during transport, prevent contamination with foreign materials. Keep chemical away from direct sunlight, heat, sparks, open flame and other ignition sources. Keep away from food and drink. Store in the original container securely closed. Protect from moisture and physical damage.

Risk of explosion if an air-dust mixture forms. Avoid creating dusty conditions. Empty only into earthed containers or use a system other designed to prevent or contain an explosion-seek expert advice.

7.3 Specific end uses(s):

No specific information.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters :

Exposure limit: no value determined .
DNEL/PNEC: not available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Do not breathe dust.
Technical measures/precautions: exposure limit(s) should be monitored using suitable analytical equipments.

8.2.2 Individual protection measures, such as personal protective equipment

8.2.2.1 Hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are closed to the workstation location. Do not eat, drink or smoke while working. Keep away from foodstuffs, beverages and food. During synthesis or formulation, follow good industrial hygiene and safety practice. Due to the colouring properties of the product closed work clothes should be used, to avoid stains during manipulation.

8.2.2.2 Eye protection:

Wear appropriate protective eyeglasses or chemical safety goggles, such as European Standard EN 166.

8.2.2.3 Skin protection:

Personnel should wear protective work clothes and closed shoes to prevent skin exposure.

8.2.2.3.1 Hand protection:

Wear chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products.

8.2.2.3.2 Body protection:

Wear protective clothing and closed footwear.

8.2.2.4 Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator as necessary, e.g. half-mask respirator or full-face respirator to EN 529. In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

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8.2.2.5 Thermal hazards: No specific information.

8.2.3 Environmental exposure control: No specific information.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	at 20°C and 101.3 kPa: Solid , Form: crystal powder; Colour: bright green-yellowish
Odour:	Odourless
pH:	No specific information.
Melting point:	359°C
Boiling point:	Not applicable since melting point is over 300°C.
Flash point:	No specific information. Remarks: Flash point is not applicable to solids at room temperature.
Evaporation rate:	No specific information.
Flammability:	No specific information.
Upper/lower flammability or explosive limits:	No specific information.
Vapour pressure:	1.71E-011 Pa (25°C) , negligible (estimated by calculation, EPI Suite™ (v. 4.10), Modified Grain Method)
Vapour density:	No specific information.
Density:	1.39 g/cm ³ (25°C)
Water solubility:	0.02 mg/L (25°C), insoluble in water
Partition coefficient :	Log Kow (KOWWIN v. 1.68 estimate) = 7.50 (estimated by calculation, EPI Suite™ (v. 4.10))
Auto flammability:	No specific information.
Decomposition temperature:	No specific information.
Viscosity:	No specific information.
Surface tension:	No specific information.
Explosive properties:	Not tested. Not explosive based on the assessment of its chemical structure.
Oxidising properties:	Not tested. Not oxidising based on the assessment of its chemical structure.

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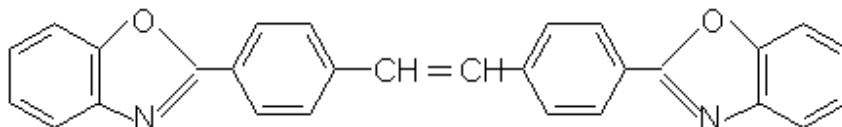
Printing date: 19/04/2013

9.2 Other information

Molecular weight: 414.47 g/mol

Molecular Formula: C₂₈H₁₈N₂O₂

Structural formula:



10. STABILITY AND REACTIVITY

10.1 Reactivity: No specific information.

10.2 Chemical stability: This substance is stable under normal ambient temperatures and pressure.
Decomposition temperature: > 400°C

10.3 Possibility of hazardous reactions: Dust explosion hazard.

10.4 Conditions to avoid: Avoid sources of ignition. Avoid electro-static discharge.

10.5 Incompatible materials: Strong acids, strong bases and strong oxidising agents.

10.6 Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

10.7 Hazardous polymerisation: Will not occur.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

11.1 Cytotoxicity and Toxicokinetics

11.1.1 Cytotoxicity: No specific information.

11.1.2 Toxicokinetics: No specific information.

11.2 Acute effects

11.2.1 Acute toxicity, oral: LD₅₀ / oral / rat: > 2 000 mg/kg

11.2.2 Acute toxicity, dermal: LD₅₀ /dermal / rat: > 1 000 mg/kg

11.2.3 Acute toxicity, inhalation: No specific information.

11.3 Irritant and corrosive effects

11.3.1 Skin irritation/corrosion: Not an irritant (rabbit).

11.3.2 Eye irritation: Not an irritant (rabbit).

11.4 Skin sensitisation: Not a sensitizer (guinea pig).

11.5 Repeated Dose Toxicity: No specific information.

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11.6 Genetic toxicity

11.6.1 Genetic toxicity in vitro: Ames-Test: negative
Chromosomal Aberration Assay: negative
HGPRT Test: negative

11.6.2 Genetic toxicity in vivo: No specific information.

11.7 Carcinogenicity: No specific information.

11.8 Toxicity to Reproduction: No specific information.

11.9 Teratogenicity: No specific information.

11.10 CMR effects: No specific information.

11.11 Other information: Inhalation of the dusts should be avoided as even inert dusts may impair respiratory organ functions. Handle in accordance with good industrial hygiene and safety practice.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

12.1.1 Acute/Prolonged Toxicity to fish: Fish general (Pisces) / 96 h / LC50: > 0.02 mg/L
Test concentrations were based on the solubility of the substance in test media.
Remarks: care should be exercised in the interpretation of the data, since the substance was tested at levels above the water solubility. No toxic effects occur within the range of solubility.

12.1.2 Acute Toxicity to Aquatic Invertebrates (daphnia): Daphnia magna / 96 h / EC50: > 0.02 mg/L
Test concentrations were based on the solubility of the substance in test media.
Remarks: care should be exercised in the interpretation of the data, since the substance was tested at levels above the water solubility. No toxic effects occur within the range of solubility.

12.1.3 Toxicity to Aquatic Plants e.g. Algae: No specific information.

12.1.4 Toxicity to Micro-organisms/Effect on activated sludge: Activated sludge / 5 h / IC50: > 100 mg/L

12.1.5 Chronic Toxicity to Fish: No specific information.

12.1.6 Chronic Toxicity to Aquatic Invertebrates: No specific information.

12.2 Persistence and degradability

12.2.1 Abiotic Degradation: No specific information.

12.2.2 Physical- and photo-chemical elimination

12.2.2.1 Biodegradation Not readily biodegradable.
(estimated by calculation, EPI Suite™ (v. 4.10))

12.2.2.2 Elimination information: No specific information.

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12.3 Bioaccumulative potential

12.3.1 Partition coefficient
n-octanol/water (log Kow):

Log Kow (KOWWIN v. 1.68 estimate) = 7.50
(estimated by calculation, EPI Suite™ (v. 4.10))

12.3.2 Bioconcentration factor
(BCF):

Bioaccumulation Estimates (BCFBAF v 3.01)
Log BCF from regression-based method = 3.877 (BCF = 7541 L/kg wet-wt)
Log BCF Arnot-Gobas method (upper trophic) = 3.664 (BCF = 4612)
(estimated by calculation, EPI Suite™ (v. 4.10))

12.4 Mobility in soil

12.4.1 Known or predicted
distribution to environmental
compartments:

No specific information.

12.4.2 Surface tension:

No specific information.

12.4.3 Adsorption/Desorption:

Log Koc = 8.844 (MCI Method); Log Koc = 6.509 (KOW Method)
(estimated by calculation, EPI Suite™ (v. 4.10))

12.5 Results of PBT and vPvB
assessment:

No specific information.

12.6 Other adverse effects:

No specific information.

12.7 Additional information:

No specific information.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products must be dumped or incinerated in accordance with local/regional regulations.

13.2 Waste from residues/
unused products:

Residual chemical should be disposed by incineration or by other modes or disposal in compliance with local/regional regulations.

13.3 Contaminated packaging:

Contaminated packing material should be treated equivalent to residual chemical. Clean packaging material should be subjected to waste management scheme (recovery recycling, reuse) according to local legislation.

13.4 Hazardous waste:

No specific information.

14. TRANSPORT INFORMATION

14.1 Land transport (ADR/RID):

Not classified as a dangerous good under transport regulations.

14.2 Inland waterway transport (AND):

Not classified as a dangerous good under transport regulations.

14.2 Marine transport (IMDG):

Not classified as a dangerous good under transport regulations.

14.3 Air transport (ICAO/IATA):

Not classified as a dangerous good under transport regulations.

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15. REGULATORY INFORMATION

This SDS was prepared in accordance with REACH and Regulation (EU) No 453/2010. Classification and labelling are in accordance with CLP Regulation and Directive 67/548/EEC (incl. amendments). Additional labelling requirements may be necessary in accordance with other National Legislation. Other national measures or guidance should be followed where appropriate.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 1907/2006 (REACH)

REACH Status: in compliance

SVHC Candidate List (last update on 19 December 2012): not listed

Substances of very high concern: not listed

Annex XIV - List of substances subject to authorisation (last update on 19 April 2013): not listed

Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: not applicable

Other Regulation:

DIRECTIVE 2009/48/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 18 June 19 on the safety of toys: not listed / unconcerned.

US: Toxic Substances Control Act (TSCA): all component(s) comprising the substance are either exempt or listed on the TSCA inventory.

Canada: Domestic Substance List (DSL): All components either exempt or listed on the DSL

National regulations (Germany):

Störfallverordnung

(12.BImSchV):

-

Water hazard classes: Class 1 (WGK 1), low hazard to water

Technical instruction air TA-Luft (2002) Chapter 5.2.5 Organic substance, dust-shaped.

(TA-Luft): To treat like whole dust. The dust-shaped emissions in exhaust gas may not exceed the following values:

Mass flow: 0.20 kg/h or mass concentration: 20 mg/m³

Even if the mass flow meets or falls below 0.20 kg/h, the mass concentration in exhaust gas may not exceed 0.15 g/m³.

15.2 Chemical Safety Assessment

A chemical safety assessment (CSA) has not been carried out for the substance as such by supplier.

16. OTHER INFORMATION

16.1 Indication of changes

SDS is updated according to REACH and CLP Regulations.

16.2 Abbreviations and acronyms

AND	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ARD	European Agreement concerning the International Carriage of Dangerous Goods by Road
B	Bio-accumulative
BCF	Bioconcentration factor
°C	Degree Celsius
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and

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repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

CSA	Chemical Safety Assessment
DNEL	Derived No Effect Level
DSL	Domestic Substances List
EC	European Community
EC50	Half maximal Effective Concentration
ECHA	European Chemical Agency
EU	European Union
g	Gram
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
h	Hour
HGPRT	Hypoxanthine-guanine phosphoribosyltransferase
IATA	International Air Transport Association
IC50	Half maximal Inhibitory Concentration
ICAO	International Civil Aviation Organization (approved and published Technical Instructions for the Safe Transport of Dangerous Goods by Air)
IMDG	International Maritime Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
kg	Kilogram
Koc	Soil Organic Carbon-Water Partitioning Coefficient
Kow	Octanol-Water Partition Coefficient
L	Litre
LC50	Lethal Concentration 50
LD50	Lethal Dose 50%
mg	Milligram
ml	Millilitre
mm	Millimetre
N	Newton
P	Persistent
Pa	Pascal
PBT	Persistent, Bio-accumulative and Toxic
PNEC	Predicted No Effect Concentration
REACH	REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
SVHC	Substance of Very High Concern
T	Toxic



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TSCA Toxic Substances Control Act
vPvB Very Persistent and Very Bio-accumulative

16.3 Key literature references and sources for data

ECHA Guidance

Data under section 9, 11 and 12 were provided by manufacturer, estimated by calculation as well as obtained by literature search.

16.4 Relevant H-, P-, R- and S-Phrases (number and full text)

According to Regulation (EC) No 1272/2008 (CLP)

Hazard statement: -

Precautionary statement:

P260: Do not breathe dust.

According to EU Directive 67/548/EEC (including amendments)

Hazard symbol(s): -

Risk phrases:-

Safety phrases:

S22: Do not breathe dust.

16.5 Training instructions

Use this substance and/or products containing substance with care. Always read the label and product information before use. Ensure you have received adequate training and/or instructions before use.

16.6 Further information

The substance is a heat resistant and chemically stable fluorescent whitener that increases whiteness and provides brighter looking colours. It is used to offset the yellowness of a polymer and to yield a whiter appearance. The substance creates brilliance by a fluorescence process involving absorption of invisible UV light and emission of visible blue and is especially useful in polyester and nylon fibers, as well as in high temperature engineering plastics.

Reissue date: 19 April 2013

Reason for reissue: see section 16.1

Printing Date: 19 April 2013

Version: 6.0

Declare to reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Users should make their own investigation to determine suitability of the information or products for their own particular purposes. The SDS was prepared and is to be used only for the substance as such. If the substance is used as a component in another product, information in this SDS may not be applicable.

END OF SAFETY DATA SHEET