A. Förster & CO.KG.

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 27.05.2015 *V - 2* *Revision: 27.05.2015*

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: BPO-HÄRTER blau**
· **1.2 Relevant identified uses of the substance or mixture and uses advised against** Not determined
· **Application of the substance / the mixture** Hardening agent/ Curing agent

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
A.Förster & Co.KG
Esinger Steinweg 50
25436 Uetersen
Phone: +49 (0) 4122-3682; e-mail: info@foerster-co.de

· **Further information obtainable from:** Phone: +49 (0) 4122-3682; e-mail: info@foerster-co.de
· **1.4 Emergency telephone number:**
Giftinformationszentrum (GIZ)-Nord, Goettingen, Deutschland
Phone: +49 (0)551 19240

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SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

GHS02 flame

Org. Perox. EF H242 Heating may cause a fire.

GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

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· ***Classification according to Directive 67/548/EEC or Directive 1999/45/EC***

Xi; Irritant

R36: Irritating to eyes.

Xi; Sensitising

R43: May cause sensitisation by skin contact.

O; Oxidising

R7: May cause fire.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· ***Information concerning particular hazards for human and environment:***
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· ***Classification system:***
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· ***2.2 Label elements***

· ***Labelling according to Regulation (EC) No 1272/2008***
The product is classified and labelled according to the CLP regulation.

· ***Hazard pictograms***

GHS02 GHS07 GHS09

· ***Signal word*** *Warning*

· ***Hazard-determining components of labelling:***
dibenzoyl peroxide

· ***Hazard statements***
H242 Heating may cause a fire.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H400 Very toxic to aquatic life.

· ***Precautionary statements***

P101	*If medical advice is needed, have product container or label at hand.*
P102	*Keep out of reach of children.*
P210	*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*
P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P220	*Keep apart from dirt, rust, chemicals, especially reducing substances, acids, alkaline solutions, amines and heavy metal compounds (such as accelerator, dessicative, metal soaps).*
P305+P351+P338	*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P314	*Get medical advice/attention if you feel unwell.*
P302+P352	*IF ON SKIN: Wash with plenty of soap and water.*
P410	*Protect from sunlight.*
P403+P235	*Store in a well-ventilated place. Keep cool.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

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· **2.3 Other hazards**
Flammable.
Risk of fire on contact with combustible substances or other substances effective in promoting the decomposition reaction.
Fire propagating effect due to oxygen release.
Thermal decomposition with temperatures above 50 °C (SADT)
Pls. refer to section 10
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

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SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**
· **Description:** *Mixture of substances listed below with nonhazardous additions.*

· **Dangerous components:**		
CAS: 94-36-0 EINECS: 202-327-6 Reg.nr.: 01-2119511472-50	dibenzoyl peroxide Xi R36; Xi R43; E R3; O R7; N R50/53 Org. Perox. B, H241; Aquatic Acute 1, H400 (M=10); Eye Irrit. 2, H319; Skin Sens. 1, H317	25-50%
CAS: 131-11-3 EINECS: 205-011-6 Reg.nr.: 01-2119437229-36	dimethyl phthalate substance with a Community workplace exposure limit	25-50%

· **Additional information:** *For the wording of the listed risk phrases refer to section 16.*

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Personal protection for the First Aider.
Take affected persons out of danger area and lay down.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Immediately remove any clothing soiled by the product.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact:** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
· **After swallowing:** *Do not induce vomiting; call for medical help immediately.*
· **4.2 Most important symptoms and effects, both acute and delayed** *No further relevant information available.*
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.

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In case of fire, the product promotes combustion.
May decompose explosively in absence of fire due to formation of vapour-air-mixture.

· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
· **Additional information**
Remove undamaged containers from the danger zone.
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Use suitable respiratory protective device in case of insufficient ventilation.
Avoid contact with the eyes and skin.
Keep away from ignition sources.
Pls. refer to section 10
· **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:**
Collect with an inert, non-combustible, absorbent material (i.e. sand, diatomaceous earth, acid binder, universal binder).
Do not seal receptacle gas tight.
Dispose contaminated material as waste according to item 13.
Pls. refer to section 10
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Keep receptacles tightly sealed.
Open and handle receptacle with care.
Do not return unused material to original containers – decomposition hazard!
Restrict the quantity stored at the work place.
Resistant to inert materials only.
Suitable materials: Stainless steel (DIN 1.4571), PVC, polyethylene, glass-lined apparatus.
Keep apart from dirt, rust, chemicals, especially reducing substances, acids, alkaline solutions, amines and heavy metal compounds 8such as accelerator, dessicative, metal soaps). Avoid naked flames, sparks, other ignition sources and sunlight.
Avoid any direct contact with accelerators.
Weigh out and mix separately when processing polyester resins.
Avoid storage in containers with an airtight closure to prevent hazardous pressure build-up due to an eventual decomposition.
Avoid contact with the eyes and skin.
Ensure good ventilation/exhaustion at the workplace.
Do not inhale gases / fumes / aerosols.
Adhere to the workplace limit values and / or other threshold values.
Avoid release to the environment.

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· **Information about fire - and explosion protection:**
Protect from heat.
Keep ignition sources away - Do not smoke.
Prevent impact and friction.
Thermal decomposition with temperatures above 50 °C under formation of explosive vapours/gases
Avoid naked flames, sparks, other ignition sources and sunlight.
Protect against electrostatic charges.
Anti-explosion protection required
Fumes can combine with air to form an explosive mixture.
Fire propagating effect due to oxygen release.
Keep apart from incompatible substances, dirt and high temperatures.
Pls. refer to section 10

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store only in the original receptacle.
Use only receptacles specifically permitted for this substance/product.
Store in a cool location.
Prevent any seepage into the ground.
Adhere to the provisions of the Law on Water Protection.
· **Information about storage in one common storage facility:**
Keep apart from other chemicals, in particular from accelerators.
Store away from foodstuffs.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Protect from contamination.
Prevent from drying out.
Store receptacle in a well ventilated area.
Store under lock and key and out of the reach of children.
· **Maximum storage temperature:** 30 °C
· **7.3 Specific end use(s)** No further relevant information available.

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SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
94-36-0 dibenzoyl peroxide	
WEL (Great Britain)	Long-term value: 5 mg/m³
131-11-3 dimethyl phthalate	
WEL (Great Britain)	Short-term value: 10 mg/m³ Long-term value: 5 mg/m³

· **DNELs**		
94-36-0 dibenzoyl peroxide		
Oral	Long-term exposure - systemic effects	1.65 mg/kg bw/day (general population)
Dermal	Long-term exposure - systemic effects	3.3 mg/kg bw/day (general population)
		6.6 mg/kg bw/day (worker)
Inhalative	Long-term exposure - systemic effects	2.9 mg/m³ (general population)
		11.75 mg/m³ (worker)

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· **PNECs**

94-36-0 dibenzoyl peroxide	
PNEC STP	0.35 mg/l (-)
PNEC aqua	0.000602 mg/l (freshwater)
	0.0000602 mg/l (marine water)
	0.000602 mg/l (intermittent releases)
PNEC sediment	0.338 mg/kg (freshwater)
	0.0338 mg/kg (marine water)
PNEC soil	0.0758 mg/kg (soil dw)
	6.67 mg/kg (food)

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Do not inhale gases / fumes / aerosols.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Do not eat, drink, smoke or sniff while working.
Use skin protection cream for skin protection.
· **Respiratory protection:**
Ensure good ventilation/exhaustion at the workplace.
Adhere to the workplace limit values and / or other threshold values.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Filter A/P2
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Neoprene gloves
Nitrile rubber, NBR
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles

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· **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Pasty
Colour:	Blue
· **Odour:**	Characteristic
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Ignition temperature:**	Not applicable
· **Decomposition temperature:**	50 °C (SADT)
· **Self-igniting:**	Pls. refer to section 10
· **Danger of explosion:**	Pls. refer to section 10
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Density at 20 °C:**	~ 1.1 g/cm³
· **Solubility in / Miscibility with water:**	Insoluble.
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No decomposition if used and stored according to specifications.
· **10.2 Chemical stability**
Resistant to inert materials only.
Suitable materials: Stainless steel (DIN 1.4571), PVC, polyethylene, glass-lined apparatus.
Thermal decomposition with temperatures above 50 °C (SADT)
· **10.3 Possibility of hazardous reactions**
Thermal decomposition or direct contact with numerous additives, such as reducing agents (i.e. amine accelerator), heavy metal compounds (in particular cobalt accelerators), acids and alkaline solutions, may lead to hazardous, autoaccelerating decomposition reactions, and possibly, to explosion or fire.
· **10.4 Conditions to avoid**
Avoid naked flames, sparks, other ignition sources and sunlight.
Protect from heat.
>30 °C
To avoid thermal decomposition do not overheat.
· **10.5 Incompatible materials:**
Keep apart from dirt, rust, chemicals, especially reducing substances, acids, alkaline solutions, amines and heavy metal compounds 8such as accelerator, dessicative, metal soaps)
Avoid any direct contact with accelerators.
· **10.6 Hazardous decomposition products:**
Formation of various organic degradation products and inflammable and explosive vapours/gases upon decomposition.

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Danger of forming toxic pyrolysis products.

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SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**		
94-36-0 dibenzoyl peroxide		
Oral	LD 50	>5000 mg/kg (rat)
Inhalative	LC50 /4h	> 24300 mg/m³ (rat) (Dust)

· **Primary irritant effect:**
· **on the skin:** Generally the product does not irritate the skin.
· **on the eye:** Irritating effect.

· **Subacute to chronic toxicity:**		
94-36-0 dibenzoyl peroxide		
Oral	NOAEL	500 mg/kg (-) (per day, 29d)

· **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
· **Sensitisation** May cause sensitisation by skin contact.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Carcinogenicity** No further relevant information available.
· **Reproductive toxicity/Fertility** No further relevant information available.

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SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
94-36-0 dibenzoyl peroxide	
EC50	35 mg/l (activated slugde)
EC50/48h	0.11 mg/l (daphnia magna)
EC50/72h	0.06 mg/l (Pseudokirchneriella subcapitata)
LC50/96h	0.06 mg/l (oncorhynchus mykiss)

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential**	
94-36-0 dibenzoyl peroxide	
BCF	66.6 (-)
log Pow	3.2 (-) (OECD 117)

· **Behaviour in environmental systems:**

· **12.4 Mobility in soil**	
94-36-0 dibenzoyl peroxide	
Koc	3.8 (-) (22 ℃)

· **Additional ecological information:**
· **General notes:**
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Disposal must be made according to official regulations.
Dilute product with suitable inert liquid to a peroxide concentration below 10% and subsequently dispose of according to the refuse disposal act.
· **Waste disposal key:**
The waste codes given above are to be considered recommendations; because of regional and industrial sector specific features, application of different waste codes is possible.

· **European waste catalogue**	
16 05 06*	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN-Number**
· **ADR, IMDG, IATA** UN3108

· **14.2 UN proper shipping name**
· **ADR** 3108 ORGANIC PEROXIDE TYPE E, SOLID (dibenzoyl peroxide), ENVIRONMENTALLY HAZARDOUS
· **IMDG** ORGANIC PEROXIDE TYPE E, SOLID (dibenzoyl peroxide), MARINE POLLUTANT
· **IATA** ORGANIC PEROXIDE TYPE E, SOLID (dibenzoyl peroxide)

· **14.3 Transport hazard class(es)**

· **ADR, IMDG**

· **Class** 5.2 Organic peroxides.
· **Label** 5.2

· **IATA**

· **Class** 5.2 Organic peroxides.
· **Label** 5.2

· **14.4 Packing group**
· **ADR, IMDG, IATA** Void

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· **14.5 Environmental hazards:**	
· **Marine pollutant:**	Symbol (fish and tree)
· **Special marking (ADR):**	Symbol (fish and tree)
· **14.6 Special precautions for user**	Warning: Organic peroxides.
· **EMS Number:**	F-J,S-R
· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	500 g
· **Transport category**	2
· **Tunnel restriction code**	D

SECTION 15: Regulatory information

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

· **National regulations:**

· **Information about limitation of use:**
Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H241 Heating may cause a fire or explosion.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.

R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
R36 Irritating to eyes.
R43 May cause sensitisation by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R7 May cause fire.

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Org. Perox. B: Organic Peroxides, Type B
Org. Perox. EF: Organic Peroxides, Types E, F
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

· ***** Data compared to the previous version altered.**