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

PERGAN
The Peroxide Company

Printing date 26.03.2020 Version: 6 Revision: 16.03.2020

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

· **1.1 Product identifier**

· **Trade name:** **PEROXAN BV-40 GS**

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture**
Reaction initiator
For industrial use

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**
PERGAN GmbH
Hilfsstoffe für industrielle Prozesse
Schlavenhorst 71
D-46395 Bocholt
Tel: +49 2871 9902-0
Fax: +49 2871 9902-50

· **Further information obtainable from:**
Environment protection / Security of labour
Competent person:
* Sales Manager Germany: Mr. Ansgar Pappenheim, e-mail: a.pappenheim@pergan.com
* Export Sales Manager: Mr. Dr. Thomas Philipps, e-mail: dr.philipps@pergan.com
* Environment protection / Security of labour : Mr. Christoph Wilting, e-mail: c.wilting@pergan.com

· **1.4 Emergency telephone number:**
- Tel: +49 2871 9902-0

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

Org. Perox. E	H242	Heating may cause a fire.
Aquatic Acute 1	H400	Very toxic to aquatic life.
Aquatic Chronic 2	H411	Toxic to aquatic life with long lasting effects.

· **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 GHS09

· **Signal word**
Warning

· **Hazard-determining components of labelling:**
butyl 4,4-bis(tert-butyldioxy)valerate

· **Hazard statements**
H242 Heating may cause a fire.
H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy metal compounds and amines).
P234	Keep only in original packaging.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P370+P378	In case of fire: Use for extinction: CO_2, powder or water spray.
P410	Protect from sunlight.
P411+P235	Store at temperatures not exceeding +30°C. Keep cool.
P420	Do not mix with peroxide-accelerators or reducing agents.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**

· **Dangerous components:**

CAS: 995-33-5 EINECS: 213-626-6 Reg-No.: 01-2120746085-55	butyl 4,4-bis(tert-butyldioxy)valerate Org. Perox. D, H242; Aquatic Acute 1, H400; Aquatic Chronic 2, H411	40-50%

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

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:** Take care of personal protection for the first aider.
· **After inhalation:** Take affected persons into fresh air and keep quiet.
· **After skin contact:** Immediately remove contaminated clothing.
· **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **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** Under certain fire conditions, traces of other toxic gases cannot be excluded.
Hydrocarbons, carbondioxide and -monoxid.
· **5.3 Advice for firefighters**
· **Protective equipment:** Do not inhale explosion gases or combustion gases.
· **Additional information** Cool endangered receptacles with water spray.
Self-protection first!

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures** Keep away from ignition sources.
In case of further temperature should be cooled with waterspray from a safe distance.
Wear breathing apparatus with filter A during decomposition of materials.
Wear protective equipment. Keep unprotected persons away.
· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:** Ensure adequate ventilation.
Large quantities should be diluted with suitable desensitation agent to a concentration below 10 % before disposal.
Pick up mechanically, collect in a suitable receptacle and dispose in accordance with government regulations.
· **6.4 Reference to other sections** In case of large spillage the environmental authority should be informed.

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SECTION 7: Handling and storage

· **7.1 Precautions for safe handling** Keep receptacles tightly sealed.
Store in cool, dry place in tightly closed receptacles.
Keep away from heat and direct sunlight.
Open and handle receptacle with care.
Prevent formation of dust.
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
Do not refill residue into storage receptacles.
Restrict the quantity stored at the work place.
Before break and at the end of work hands should be thoroughly washed.
Only use tools made of suitable materials (e. g. polyethylene or stainless steel).
Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines).
Avoid contact with skin and eyes.
While using do not eat, drink or smoke.

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Do not generate flames or sparks.
Keep product and emptied container away from heat and sources of ignition.
Avoid shock and friction.
Take precautionary measures against static discharges.

Do not smoke.

· **Information about fire - and explosion protection:**

Protect from heat.
Protect against electrostatic charges.
Prevent impact and friction.
Use explosion-proof apparatus / fittings and spark-proof tools.
Dust can combine with air to form an explosive mixture.
Substance/product is oxidising when dry.

Avoid open flames, sparks, direct sunlight and other sources of ignition.

Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:** Pay attention to the special requirements of your local autorithies for storing dangerous goods.

· **Requirements to be met by storerooms and receptacles:**

Store in a cool location.
Store only in the original receptacle.
Prevent any seepage into the ground.
Use only receptacles specifically permitted for this substance/product.

· **Information about storage in one common storage facility:**

Do not store or park organic peroxide together with heavy metal compounds and amines.
Store away from foodstuffs, drinks and feeding stuffs.

· **Further information about storage conditions:**

Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Protect from contamination.
Store in a cool place.
Storage in a collecting room is required.

· **Recommended storage temperature (To maintain quality):** max.: +30°C

· **Storage class:** 5.2

· **7.3 Specific end use(s)** No further relevant information available.

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:** The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **DNELs**

995-33-5 butyl 4,4-bis(tert-butyldioxy)valerate		
Dermal	DNEL Longterm System	14 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	19,7 mg/m3 (Worker)

· **PNECs**

995-33-5 butyl 4,4-bis(tert-butyldioxy)valerate	
PNEC Marinewater sed	0,031 mg/kg sed dw (-)
PNEC Freshwater	0,00042 mg/l (AF 1.000)
PNEC Freshwater sed	0,306 mg/kg sed dw (-)
PNEC STP	2 mg/l (AF 10)
PNEC Marinewater	0,00004 mg/l (AF 10.000)

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

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· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
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.
Be sure to clean skin thoroughly after work and before breaks.

· **Respiratory protection:** Not necessary if room is well-ventilated.
Use suitable respiratory device when it exceed exposure limit and when insufficiently ventilated.


Filter P2

· **Protection of hands:** Only use chemical-protective gloves with CE-labelling of category III.


Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Protective gloves

· **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.
Butyl rubber, BR
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
Neoprene

· **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

· **Body protection:**


Protective work clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
· **Form:**	Solid Granulate
· **Colour:**	White
· **Odour:**	Characteristic
· **Change in condition**	
· **Melting point/freezing point:**	Undetermined.
· **Initial boiling point and boiling range:**	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	May cause fire.
· **Decomposition temperature:**	+60 °C (SADT)
· **Auto-ignition temperature:**	Product is not selfigniting.
· **Explosive properties:**	Product is not explosive. However, formation of explosive air/dust mixtures are possible.
· **Density:**	
· **Bulk density at 20 °C:**	725 kg/m³
· **Solubility in / Miscibility with**	
· **water:**	Insoluble.
· **Partition coefficient: n-octanol/water:**	not determined
· **9.2 Other information**	No further relevant information available.

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SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:** SADT (Self Accelerating Decomposition Temperature) is the lowest temperature at which self accelerating decomposition may occur with substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be cause decomposition at and above the temperature. Contact with incompatible substances can cause decomposition at or below the SADT.
No decomposition if used and stored according to specifications.
To avoid thermal decomposition do not overheat.
· **10.3 Possibility of hazardous reactions** Self-accelerating decomposition at SADT.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** Rapid decomposition by dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines).
· **10.6 Hazardous decomposition products:** Hydrocarbons, carbondioxide and -monoxid.
No hazardous decomposition products if used and stored according to specifications.
· **Additional information:** Emergency procedures will vary depending on conditions. The customer should have an emergency response plane in place.

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity** Based on available data, the classification criteria are not met.
· **Primary irritant effect:**
· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
· **Carcinogenicity** Based on available data, the classification criteria are not met.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
995-33-5 butyl 4,4-bis(tert-butyldioxy)valerate	
EC50 / 72h	0,4215 mg/l (alga)

· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:** Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **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**

After diluting with a suitable inert solid material to 10 %, the product must be supplied to a special treatment (e. g. thermal utilization) under observance of all official regulations.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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· **Waste disposal key:** Please contact your hazardous waste disposers to assign the right EWC-(European waste catalog)-number.

· **Uncleaned packaging:**
· **Recommendation:** This material and its container must be disposed of as hazardous waste.

SECTION 14: Transport information

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

· **14.2 UN proper shipping name**
· **ADR** UN3108 ORGANIC PEROXIDE TYPE E, SOLID (n-BUTYL-4,4-DI-(tert-BUTYLPEROXY)-VALERATE), ENVIRONMENTALLY HAZARDOUS
· **IMDG** ORGANIC PEROXIDE TYPE E, SOLID (n-BUTYL-4,4-DI-(tert-BUTYLPEROXY)-VALERATE), MARINE POLLUTANT
· **IATA** ORGANIC PEROXIDE TYPE E, SOLID (n-BUTYL-4,4-DI-(tert-BUTYLPEROXY)-VALERATE)

· **14.3 Transport hazard class(es)**

· **ADR**

· **Class** 5.2 (P1) Organic peroxides.
· **Label** 5.2

· **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

· **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.
· **Hazard identification number (Kemler code):** -
· **Stowage Category** D
· **Stowage Code** SW1 Protected from sources of heat.
· **Segregation Code** SG35 Stow "separated from" SGG1-acids
SG36 Stow "separated from" SGG18-alkalis.

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **ADR**
· **Limited quantities (LQ)** 500 g
· **Excepted quantities (EQ)** Code: E0
Not permitted as Excepted Quantity
· **Transport category** 2
· **Tunnel restriction code** D

· **RID / GGVSEB:** like ADR

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· **IMDG**	
· **Limited quantities (LQ)**	500 g
· **Excepted quantities (EQ)**	Code: E0 Not permitted as Excepted Quantity

SECTION 15: Regulatory information

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

· **Directive 2012/18/EU**	
· **Named dangerous substances - ANNEX I**	None of the ingredients is listed.
· **Seveso category**	P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES E1 Hazardous to the Aquatic Environment
· **Qualifying quantity (tonnes) for the application of lower-tier requirements**	50 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements**	200 t

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**	H242 Heating may cause a fire. H400 Very toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects.
· **Department issuing SDS:**	Environment protection / Security of labour
· **Contact:**	Tel: +49 2871 9902-0 E-mail: mail@pergan.com
· **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) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative Org. Perox. D: Organic peroxides – Type C/D Org. Perox. E: Organic peroxides – Type E/F Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
· ***** **Data compared to the previous version altered.**	