



1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name BONDAN ST04 – Component B

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

General use Adhesive.

1.3 Details of the supplier of the safety data sheet

Drei Bond GmbH · Carl-Zeiss-Ring 13 · 85737 Ismaning
t +49 (0)89 96 24 27-0 · f +49 (0)89 96 24 27-19
Department responsible for information: info@bondan.de · t +49 89 962427-0

1.4 Emergency telephone number

Drei Bond GmbH	Tel. +49 (0)89 96 24 27-0
Carl-Zeiss-Ring 13	During office hours
85737 Ismaning	Mo – Do 9:00 am – 05:00 pm
	Fr 8:00 am – 3:00 pm

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

Physical hazards	Flam. Liq. 2 - H225
Health hazards	Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT SE 3 - H335
Environmental hazards	Aquatic Chronic 3 - H412

2.2 Label elements

Labelling CLP:



Signal word

Danger

Hazard statements

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

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.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352a	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.



Special labelling

Contains: METHYL METHACRYLATE, ISOBORNYL METHACRYLATE

Supplementary precautionary statements

P243	Take action to prevent static discharges.
P261	Avoid breathing vapour/ spray.
P264	Wash contaminated skin thoroughly after handling.
P273	Avoid release to the environment.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/ attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

2.3 Other hazards

None under normal conditions. This substance is not classified as PBT or vPvB according to current EU criteria.

3 Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

Ingredient	Designation	Content	Classification
CAS number: 80-62-6 EC number: 201-297-1 REACH registration number: 01-2119452498-28-XXXX	METHYL METHACRYLATE	30 - 60 %	Flam. Liq. 2 - H225 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 STOT SE 3 - H335
CAS number: 7534-94-3 EC number: 231-403-1 REACH registration number: 01-2119886505-27-XXXX	ISOBORNYL METHACRYLATE	10 - 30 %	Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335 Aquatic Chronic 3 - H412



CAS number: 148861-07-8 REACH registration number: REACH registration exemption – < 1 tonne	TRIETHYLBORANE-1,3- DIAMINOPROPANE COMPLEX	1 - 5 %	Acute Tox. 4 - H312 Skin Corr. 1A - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317
CAS number: 128-37-0 EC number: 204-881-4 REACH registration number: REACH registration exemption – < 1 tonne	2,6-DI-TERT-BUTYL- P-CRESOL	< 1 %	Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 M factor (acute) = 1 M factor (chronic) = 1

The full text for all hazard statements is displayed in Section 16.

4 First aid measures

4.1 Description of first aid measures

Inhalation	Move the exposed person to fresh air. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms develop, obtain medical attention.
Eye contact	Remove any contact lenses and open eyelids wide apart. Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

Skin contact	Skin irritation, mild dermatitis, allergic skin rash.
Eye contact	Irritating and may cause redness and pain.

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor	No specific recommendations. Treat symptomatically.
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5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards Vapours are heavier than air and may travel along the floor and accumulate in the bottom of containers. Vapours may be ignited by a spark, a hot surface or an ember.

Hazardous combustion Products Burning produces irritating, toxic and obnoxious fumes. Carbon monoxide, carbon dioxide, and unknown hydrocarbons. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk.

5.3 Advice for firefighters

Special protective equipment for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions Eliminate all sources of ignition. Ensure adequate ventilation of the working area. Do not breathe vapour. Wear protective clothing as described in Section 8 of this safety data sheet.



6.2 Environmental precautions

Do not discharge into drains or watercourses or onto the ground.

6.3 Methods and material for containment and cleaning up

Absorb spillage with sand or other inert absorbent. Transfer to suitable, labelled containers for disposal.

6.4 Reference to other sections

For personal protection, see Section 8. For waste disposal, see section 13.

7 Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Use in a well ventilated area. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed, in a cool, well ventilated place. Keep container dry. Store in closed original container at temperatures between 2°C and 7°C.

7.3 Specific end use(s)

Adhesive

8 Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

METHYL METHACRYLATE

Long-term exposure limit (8-hour TWA): WEL 50 ppm 208 mg/m³

Short-term exposure limit (15-minute): WEL 100 ppm 416 mg/m³



METHACRYLIC ACID

Long-term exposure limit (8-hour TWA): WEL 20 ppm 72 mg/m³

Short-term exposure limit (15-minute): WEL 40 ppm 143 mg/m³

2,6-DI-TERT-BUTYL-P-CRESOL

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³

WEL = Workplace Exposure Limit

METHYL METHACRYLATE (CAS: 80-62-6)

DNEL

Workers, Industry/Professional - Inhalation; Long term : 208 mg/m³

Workers, Industry/Professional - Dermal; Long term : 13.67 mg/kg/day

Workers, Industry/Professional - Inhalation; Short term : 416 mg/m³

PNEC

Workers, Industry/Professional - Water; Long term <0.94 mg/l

ISOBORNYL METHACRYLATE (CAS: 7534-94-3)

DNEL

Workers - Dermal; Long term systemic effects: 1.04 mg/kg/day

PNEC

Fresh water; 4.66 µg/l

marine water; 0.466 µg/l

STP; 2.45 mg/l

Sediment (Freshwater); 0.604 mg/kg

Sediment (Marinewater); 0.06 mg/kg

Soil; 0.118 mg/kg

2,6-DI-TERT-BUTYL-P-CRESOL (CAS: 128-37-0)

DNEL

Workers - Inhalation; Long term systemic effects: 3.5 mg/m³

Workers - Dermal; Long term systemic effects: 0.5 mg/kg/day

PNEC

Fresh water; 0.199 µg/l

marine water; 0.02 µg/l

STP; 0.17 mg/l
Sediment (Freshwater); 99.6 µg/kg
Sediment (Marinewater); 9.96 µg/kg
Soil; 8.33 mg/kg

TRIMETHYLENEDIAMINE (CAS: 109-76-2)

DNEL

Workers - Inhalation; Long term systemic effects: 3 mg/m³

Workers - Dermal; Long term systemic effects: 0.26 mg/kg/day

PNEC

Fresh water; 0.2 mg/l

marine water; 0.02 mg/l

STP; 10 mg/l

Sediment (Freshwater); 96 mg/kg

Sediment (Marinewater); 9.6 mg/kg

Soil; 19 mg/kg

8.2 Exposure controls

Protection equipment



Appropriate engineering controls

Normal (mechanical) room ventilation should be adequate for small volumes. For higher volume activities, or if needed for worker comfort, local mechanical exhaust should be provided.

Eye/face protection

Use approved safety goggles or face shield. Personal eye protection should conform to EN 166.

Hand protection

It is recommended that chemical-resistant, impervious gloves are worn. Gloves should conform to EN 374. For exposure up to 4 hours, wear gloves made of the following material: Nitrile rubber. Thickness: ≥ 0.4 mm
The selected gloves should have a breakthrough time of



at least 0.5 hours. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber. Thickness: ≥ 0.4 mm The selected gloves should have a breakthrough time of at least 8 hours. The breakthrough time for any glove material may be different for different glove manufacturers. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected.

Other skin and body protection	Uniforms, coveralls, or a lab coat should be worn.
Hygiene measures	Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Wash promptly if skin becomes contaminated. Use of good industrial hygiene practices is required.
Respiratory protection	Ensure adequate ventilation of the working area. Respiratory protection may be required if excessive airborne contamination occurs. Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Organic vapour filter, Type A (EN14387).

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	viscous liquid
Colour	colourless
Odour	ester-like
Odour threshold	not available
pH	not relevant
Melting point	not available
Initial boiling point and range	≈ 100 °C
Flash point	11 °C



Evaporation rate	not available
Upper/lower flammability or explosive limits	not available
Vapour pressure	not available
Vapour density	not available
Relative density	1.0
Solubility(ies)	Insoluble in water. Soluble in the following materials: Organic solvents.
Auto-ignition temperature	not available
Viscosity	≈ 10000 mPa·s @ 23°C
Oxidising properties	not available

10 Stability and reactivity

10.1 Reactivity

The following materials may react with the product: Strong acids

10.2 Chemical stability

Stable at normal ambient temperatures.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, no hazardous reactions will occur.

10.4 Conditions to avoid

Take precautionary measures against static discharges. Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials

strong oxidising agents, strong acids, strong alkalis

10.6 Hazardous decomposition products

Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds.



11 Toxicological information

11.1 Information on toxicological effects

Toxicological effects The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Skin sensitisation

Skin sensitization May cause sensitisation by skin contact.

Aspiration hazard

Aspiration hazard None under normal conditions.

Inhalation

May cause respiratory system irritation.

Skin contact

Irritating to skin.

Eye contact

Irritating and may cause redness and pain.

Toxicological effects on ingredients

METHYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation 29.8

(LC₅₀ vapours mg/l)

Species Rat



Skin corrosion/irritation

Skin corrosion/irritation

Not irritating. Prolonged skin contact may cause temporary irritation.

Serious eye damage/irritation

Serious eye damage/irritation

not irritating

Respiratory sensitisation

Respiratory sensitisation

Mouse: Sensitising

Skin sensitisation

Skin sensitisation

Local Lymph Node Assay (LLNA) - Mouse: Sensitising

Germ cell mutagenicity

Genotoxicity - in vitro

inconclusive

Genotoxicity - in vivo

This substance has no evidence of mutagenic properties.

Carcinogenicity

Carcinogenicity

CMR: no

IARC carcinogenicity

IARC Group 3: Not classifiable as to its carcinogenicity to humans.

Reproductive toxicity

Reproductive toxicity - fertility

No evidence of reproductive toxicity in animal studies.

Reproductive toxicity - development

No evidence of reproductive toxicity in animal studies. non-teratogenic, not embryotoxic

Specific target organ toxicity - single exposure

STOT - single exposure

respiratory tract Irritation

Specific target organ toxicity - repeated exposure

STOT - repeated exposure

No specific target organs known.

Aspiration hazard

Aspiration hazard

Based on available data the classification criteria are not met.

**ISOBORNYL METHACRYLATE**Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,000.1
Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 3,000.0
Species Rabbit

Acute toxicity - inhalation

Notes (inhalation LC₅₀) no information available

Skin corrosion/irritation

Animal data Erythema/eschar score: Well defined erythema (2). Fully reversible within 7 days.

Serious eye damage/irritation

Serious eye damage/irritation Rabbit: Not irritating

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative

Carcinogenicity

Carcinogenicity No specific test data are available.

Reproductive toxicity

Reproductive toxicity - fertility Screening - NOAEL 500 mg/kg/day, Oral, Rat F1

Reproductive toxicity - development

Developmental toxicity: - NOEC: >500 mg/kg/day, Oral, Rat

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.



Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard not applicable

2,6-DI-TERT-BUTYL-P-CRESOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 6,000.0
Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,000.1
Species Rat

Skin corrosion/irritation

Animal data Erythema/eschar score: No erythema (0); Not irritating

Serious eye damage/irritation

Serious eye damage/irritation Method: OECD 405, Rabbit Not irritating

Skin sensitisation

Skin sensitisation - Guinea pig: Not sensitising

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative

Genotoxicity - in vivo

Chromosome aberration: Negative

Carcinogenicity

Carcinogenicity No evidence of carcinogenicity in animal studies.

IARC carcinogenicity

IARC Group 3 Not classifiable as to its carcinogenicity to humans.

Reproductive toxicity

Reproductive toxicity - fertility Two-generation study - NOAEL 100 mg/kg/day, Oral, Rat F1

Reproductive toxicity -
developmentDevelopmental toxicity: - LOAEL: 500 mg/kg/day, Oral,
RatSpecific target organ toxicity - single exposure

STOT - single exposure

no information available

Specific target organ toxicity - repeated exposure

STOT - repeated exposure

no information available

Aspiration hazard

Aspiration hazard

no information available

12 Ecological information

Ecotoxicity

Harmful to aquatic life with long lasting effects.

12.1 Toxicity

Toxicity

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Ecological information on ingredients**METHYL METHACRYLATE**Acute aquatic toxicity

Acute toxicity - fish

LC₅₀, 96 hours: 85 mg/l, Oncorhynchus mykiss (Rainbow trout)Acute toxicity - aquatic
InvertebratesEC₅₀, 48 hours: > 130 mg/l, Daphnia magna

Acute toxicity - aquatic plants

EC₅₀, 72 hours: 45 mg/l, Selenastrum capricornutum
LOEC, 72 hours: 45 mg/l, Selenastrum capricornutum

Acute toxicity - microorganisms

EC₅₀, 17 hours: 270 mg/l, Pseudomonas putida



Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOEC, 35 days: 10 mg/l, Danio rerio (Zebrafish)

Chronic toxicity - aquatic Invertebrates NOEC, 21 days: 53 mg/l, Daphnia magna

ISOBORNYL METHACRYLATE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 1.79 mg/l, Danio rerio (Zebrafish)

Acute toxicity - aquatic Invertebrates EC₅₀, 48 hours: > 2.57 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: 2.28 mg/l, Pseudokirchneriella subcapitata

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates NOEC, 21 days: 0.233 mg/l, Daphnia magna

2,6-DI-TERT-BUTYL-P-CRESOL

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (acute) 1

Acute toxicity - fish LC₅₀, 96 hours: 0.199 mg/l, Fish

Acute toxicity - aquatic Invertebrates EC₅₀, 48 hours: 0.48 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 96 hours: 0.758 mg/l, Algae

Chronic aquatic toxicity

M factor (chronic) 1



12.2. Persistence and degradability

Persistence and degradability The product is not readily biodegradable.

Ecological information on ingredients

METHYL METHACRYLATE

Biodegradation Water - Degradation 94%: 14 days

ISOBORNYL METHACRYLATE

Biodegradation Water - Degradation 70%: 28 days

12.3 Bioaccumulative potential

Bioaccumulative potential There is no data available on bioaccumulation.

Ecological information on ingredients

2,6-DI-TERT-BUTYL-P-CRESOL

Partition coefficient log Pow: 5.1

12.4 Mobility in soil

Mobility No data available. The product has poor water-solubility.

12.5 Results of PBT and vPvB assessment

This substance is not classified as PBT or vPvB according to current EU criteria.

12.6 Other adverse effects

none known

13 Disposal considerations

13.1 Waste treatment methods

General information

Waste disposal should be in accordance with existing Community, National and local regulations Empty containers may contain product residue; follow SDS and label warnings even after they have been emptied.

Disposal methods

Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

Waste class

08 04 09* waste adhesives and sealants containing organic solvents or other dangerous substances.

14 Transport information

14.1 UN number

1993

14.2 UN proper shipping name

FLAMMABLE LIQUID, N.O.S. (contains Methylmethacrylate)

14.3 Transport hazard class(es)

3

Transport labels



14.4 Packing group

II



14.5 Environmental hazards

14.6 Special precautions for user

EmS F-E, S-E

Tunnel restriction code (D/E)

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15 Regulatory information

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

National regulations

The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) (as amended).

EU legislation Regulation (EC)

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 (as amended).

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Guidance

Workplace Exposure Limits EH40.

CHIP for everyone HSG228.

Safety Data Sheets for Substances and Preparations.

Approved Classification and Labelling Guide (Sixth edition) L131.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.



16 Other information

Revision date: 17.02.2021

Supersedes date: 18.03.2020

Wording of the hazard statements under paragraph 2 and 3:

H225 Highly flammable liquid and vapour.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.

Department issuing data sheet:

Contact person: see section 1: Dept. responsible for information

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

(The data on the hazardous ingredients were taken from the most recent safety data sheet from the supplier.)