

Material Safety Data Sheet according to (EC) 1907/2006



Tradename:

OSAMU-Bond

Status: 12.04.2018

Page: 1 von 10

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

1.1. Product identifier

Name of product: OSAMU-Bond

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

Use of the substance/mixture

Dental appliance.

1.3. Details of the supplier of the safety data sheet

Manufacturer / distributor

SCHEU DENTAL GmbH

Am Burgberg 20

D-58642 Iserlohn

Tel. +49 (2374) 9288-0

Fax +49 (2374) 9288-90

eMail: service@SCHEU-DENTAL.com

Internet: www.SCHEU-DENTAL.com

1.4. Emergency telephone number: +49 (2374) 9288-0

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazard categories:

Flammable liquid: Flam. Liq. 2

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Reproductive toxicity: Repr. 2

Specific target organ toxicity - single exposure: STOT SE 3

Specific target organ toxicity - repeated exposure: STOT RE 2

Aspiration hazard: Asp. Tox. 1

Hazardous to the aquatic environment: Aquatic Acute 1

Hazardous to the aquatic environment: Aquatic Chronic 1

Hazard Statements:

Highly flammable liquid and vapour.

May be fatal if swallowed and enters airways.

Causes skin irritation.

Causes serious eye irritation.

May cause drowsiness or dizziness.

Suspected of damaging fertility.

May cause damage to organs through prolonged or repeated exposure.

Very toxic to aquatic life.

Very 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.

Hazardous components which must be listed on the label

butanone; ethyl methyl ketone

cyclohexane

pentane

n-hexane

Signal word: Danger

Hazard Pictograms: GHS02-GHS07-GHS08-GHS09



Material Safety Data Sheet according to (EC) 1907/2006

Tradename:

OSAMU-Bond

Status: 12.04.2018

Page: 2 von 10

Hazard statements

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take action to prevent static discharge.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a doctor.
P331	Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P362+P364	Take off contaminated clothing and wash it before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a doctor if you feel unwell.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice /attention.
P308+P313	If exposed or concerned: Get medical advice/attention.
P370+P378	In case of fire: Use carbon dioxide or foam to extinguish.
P391	Collect spillage.
P233	Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

2.3. Other hazards

No information available.

SECTION 3: Composition / information on ingredients**3.1. Substances**

not applicable

3.2. Mixtures**Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
Index No		
REACH-No		
201-159-0	butanone; ethyl methyl ketone	35 - < 40 %
78-93-3	Flam.Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066	
606-002-00-3		

Material Safety Data Sheet according to (EC) 1907/2006



Tradename:

OSAMU-Bond

Status: 12.04.2018

Page: 3 von 10

203-806-2	cyclohexane	40 - < 45 %
110-82-7	Flam.Liq.2, Asp.Tox.1, Skin Irrit.2, STOT SE3, Aquatic Acute 1, Aquatic Chronic; H225 H304 H315 H336 H400 H410	
601-017-00-1		
203-692-4	pentane	10 - < 15 %
109-66-0	Flam. Liq. 2, Asp. Tox. 1, STOT SE 3, Aquatic Chronic 2; H225 H304 H336 H411 EUH066	
601-006-1		
203-777-6	n-hexane	5 - < 10 %
110-54-3	Flam.Liq. 2, Repr. 2, Asp.Tox. 1, STOT RE 2, Skin Irrit. 2, STOT SE 3, Aquatic Chronic 2; H225 H361f *** H304 H373 ** H315 H336 H411	
601-037-00-0		
205-563-8	heptane; n-heptane	1 - < 5 %
142-82-5	Flam.Liq. 2, Asp.Tox.1, Skin Irrit.2, STOT SE3, Aquatic Acute 1 Aquatic Chronic 1; H225 H304 H315 H336 H400 H410	
601-008-00-2		

Additional information

For the wording of the listed H-phrases refer to section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

- General information:** Remove contaminated, saturated clothing immediately. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention.
- After inhalation:** Provide fresh air. When in doubt or if symptoms are observed, get medical advice.
- After contact with skin:** After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.
- After contact with eyes:** After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
- After ingestion:** Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Medical treatment necessary.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Fire-extinguishing powder.

Unsuitable extinguishing media

Water.

5.2. Special hazards arising from the substance or mixture

Flammable. Vapours can form explosive mixtures with air.

Material Safety Data Sheet according to (EC) 1907/2006



Tradename:

OSAMU-Bond

Status: 12.04.2018

Page: 4 von 10

5.3. Advice for firefighters

Wear self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Do not breathe gas/fumes/vapour/spray.

Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Danger of explosion

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Vapours can form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities

Storage:

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Information about storage in one common storage facility:

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

7.3. Specific end use(s)

Dental appliance.

SECTION 8: Exposure controls / personal protection

Additional information about design of technical facilities.

No further data ; see item 7.

Material Safety Data Sheet according to (EC) 1907/2006

Tradename:

OSAMU-BondStatus: 12.04.2018
Page: 5 von 10**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
110-82-7	Cyclohexane	100	350		TWA (8 h)	WEL
		300	1050		STEL (15 min)	WEL
109-66-0	Pentane	600	1800		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
142-82-5	n-Heptane	500	2085		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
110-54-3	n-Hexane	20	72		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

8.2. Exposure controls**Appropriate engineering controls:**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures:

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Eye/face protection

Suitable eye protection: goggles.

Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties****General Information**

Physical state	liquid
Colour	colourless
Odour	characteristic
pH-Value:	not determined
Changes in the physical state	
Melting point	not determined
Initial boiling point and boiling range	79 °C
Flash point	-19 °C
Flammability	
Solid	not applicable

Material Safety Data Sheet according to (EC) 1907/2006

Tradename:

OSAMU-Bond

Status: 12.04.2018

Page: 6 von 10

Gas	not applicable
Lower explosion limits	1,2 vol. %
Upper explosion limits	11,5 vol. %
Ignition temperature	260 °C
Auto-ignition temperature	
Solid	not applicable
Gas	not applicable
Decomposition temperature	not determined
Vapour pressure (at 20 °C)	105 hPa
Density	0,810 g/cm ³
Water solubility	The study does not need to be conducted because the substance is known to be insoluble in water.
Solubility in other solvents	96 % miscible with most organic solvents
Partition coefficient	not determined
Viscosity / kinematic at 20 °C	20 mm ² /s
Vapour density	not determined
Evaporation rate	not determined

9.2. Other information

Solid content 4,0 %

SECTION 10: Stability and reactivity**10.1. Reactivity**

Flammable, Ignition hazard.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No dangerous decomposition products known.

SECTION 11: Toxicological Information**11.1. Information on toxicological effects****Acute toxicity**

Based on available data, the classification criteria are not met.

CAS No.	Chemical name				
	Exposure route	Dose	Species	Source	Method
109-66-0	pentane				
	inhalative (4 h) vapour	LC50 364 mg/l	Rat	GESTIS	

Irritation and corrosivity:**On the skin:** Causes skin irritation.**On the eye:** Causes serious eye irritation.**Sensitising effects**

Based on available data, the classification criteria are not met.

Material Safety Data Sheet according to (EC) 1907/2006



Tradename:

OSAMU-Bond

Status: 12.04.2018
Page: 7 von 10

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging fertility. (n-hexane)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

STOT-single exposure

May cause drowsiness or dizziness. (butanone; ethyl methyl ketone; cyclohexane)

Aspiration hazard

May be fatal if swallowed and enters airways. (cyclohexane; pentane; n-hexane; heptane; n-heptane)

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) no. 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological Information

12.1. Toxicity

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

Aquatic toxicity:

CAS No	Chemical name	Dose	[h] [d]	Species	Source	Method
109-66-0	pentane					
	Acute crustacea toxicity	EC50 9,74 mg/l	48 h	Daphnia magna	IUCLID	
110-54-3	n-hexane					
	Acute fish toxicity	LC50 2,5 mg/l	96 h	Pimephales promelas	Geiger et al. 1990	
142-82-5	heptane; n-heptane					
	Acute fish toxicity	LC50 375 mg/l	96 h		GESTIS	

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
109-66-0	pentane	3,39
110-54-3	n-hexane	3,9
142-82-5	heptane; n-heptane	4,66

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT an vPvB assessment

The product has not been tested.

12.6. Other adverse effects

No further relevant information available.

Further information:

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

Material Safety Data Sheet according to (EC) 1907/2006

Tradename:

OSAMU-Bond

Status: 12.04.2018

Page: 8 von 10

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Advice on disposal**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport Information**Land transport (ADR/RID)**

14.1. UN number:	UN 1133
14.2. UN proper shipping name:	Adhesives
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Classification code:	F1
Special Provisions:	640D
Limited quantity:	5 L
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E
Other applicable information (land transport)	E2

Inland waterways transport (ADN)

14.1. UN number:	UN 1133
14.2. UN proper shipping name:	Adhesives
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Classification code:	F1
Spezial Provisions:	640D
Limited quantity:	5 L
Other applicable information (inland waterways transport)	E2

Marine transport (IMDG)

14.1. UN number:	UN 1133
14.2. UN proper shipping name:	Adhesives
14.3. Transport hazard class(es):	3
14.4. Packaging group:	II
Hazard label:	3
Special Provisions:::	-
Limited quantity:	5 L
EmS:	F-E, S-D
Other applicable information (marine transport):	E2

Air transport (ICAO)

14.1. UN number:	UN 1133
14.2. UN proper shipping name:	Adhesives
14.3. Transport hazard class(es):	3
14.4. Packaging group:	II
Hazard label:	3

Material Safety Data Sheet according to (EC) 1907/2006

Tradename:

OSAMU-Bond

Status: 12.04.2018

Page: 9 von 10

Special Provisions:	A3
Limited quantity Passenger:	1 L
IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364
IATA-max. quantity - Cargo:	60 L
Other applicable information (air transport)	E2
Passenger-LQ:	Y341

14.6. Special precautions for user

No information available.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory Information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3: pentane

Entry 57: cyclohexane

2010/75/EU (VOC): 61 % (494,1 g/l)

2004/42/EC (VOC): 61 % (494,1 g/l)

Information according to 2012/18/EU E1 Hazardous to the Aquatic Environment (SEVESO III)

Additional information: P5c

Additional information

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

National regulatory information

Employment restrictions:	Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water contaminating class (D)	3 – highly water contaminating

15.2. Chemical Safety Assessment

Chemical Safety Assessment for substances in this mixture were not carried out.

SECTION 16: Other Information**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 Harmonized 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)
LC50	Lethal concentration, 50 %
LD50	Lethal dose, 50 %

Material Safety Data Sheet according to (EC) 1907/2006

Tradename:

OSAMU-Bond

Status: 12.04.2018

Page: 10 von 10

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Flam. Liq. 2; H225	On basis of test data
Asp. Tox. 1; H304	Calculation method
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
Repr. 2, H361f	Calculation method
STOT SE 3; H336	Calculation method
STOT RE 2; H373	Calculation method
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 1; H410	Calculation method

Relevant H- and EUH-phrases (Number and full text)

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.