


## SAFETY DATA SHEET

[info@deffner-johann.de](mailto:info@deffner-johann.de) | +49 9723 9350-0

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<b>NANORESTORE CLEANING POLAR COATING B</b> Art. Nr.: 2090 002	
<p style="text-align: right;">Date of compilation: 21/12/2015 Revision: 0 of 1 21/12/2015</p> <p style="text-align: center;"><b>MATERIAL SAFETY DATA SHEET</b> In accordance with Regulation (EC) 1907/2006 and Regulation 830/2015</p>	

## 1. Identification of the substance/mixture and of the company/enterprise

**1.1 Product identifier:** **NANORESTORE CLEANING POLAR COATING B** (Art. Nr.: 2090 002)

**1.2 Relevant identified uses of the substance or mixture:**  
Laboratory chemicals.

**1.3 Details of the supplier of the safety data sheet:**  
Deffner & Johann GmbH  
Mühläckerstr. 13  
97520 Rötthlein  
Germany  
Tel.+49-(0)9723-93500

**1.4 Emergency phone number:**  
Tel.:+49-(0)9723-93500 (call during office hours)

E-mail TC: [info@deffner-johann.de](mailto:info@deffner-johann.de)

## 2. Hazards identification

**2.1 Classification of the substance or mixture**  
**Classification according to Regulation (EC) No 1272/2008:**  
Flammable liquid (category 2)  
Serious eye damage (category 1)  
Specific target organ toxicity – single exposure (category 3)

**Hazard statement Code(s):**  
H225 - Highly flammable liquid and vapour.  
H318 - Causes serious eye damage.  
H336 - May cause drowsiness or dizziness

The product is a liquid that ignites easily at temperatures < 23 °C if it exposed to an ignition source.

**2.2. Label elements:**  
**Pictogram, Signal Word Code(s):**  
Danger



**Hazard statement Code(s):**  
H225 - Highly flammable liquid and vapour.  
H318 - Causes serious eye damage.  
H336 - May cause drowsiness or dizziness  
**Supplemental Hazard statement Code(s):**  
EUH066 - Repeated exposure may cause skin dryness or cracking.

**Precautionary statements:**

Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 - Keep container tightly closed.

P243 - Take precautionary measures against static discharge.

P261 - Avoid breathing vapours/spray.

Response

P303+P361+P353 - IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 - IF INHALED: remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 - IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTER/doctor.

P370+P378 - In case of fire: Use CO<sub>2</sub>, foam, chemical powder for flammable liquids to extinguish.

Storage

P403+P235 - Store in a well-ventilated place. Keep cool.

**Contains:**

Butanone, Alkyl(C<sub>9-11</sub>) alcohol, ethoxylated

*2.3 Other hazards:*

none information

**3. Composition/Information on ingredients**

3.2 Mixtures

Chemical composition:

Name	Concentration (C)	Classification Regulation	
		CE/1272/2008	
Butanone*	15 < C ≤ 22	Flam Liq. 2	H225
Cas No 78-93-3		Eye Irrit. 2	H319
CE No 201-159-0		STOT SE 3	H336
Index No 606-002-00-3			EUH066
Butan-2-ol	5 < C ≤ 10	Flam. Liq. 3	H226
Cas No 78-92-2		Eye Irrit. 2	H319
CE No 201-158-5		STOT SE 3	H335
Index No 603-127-00-5		STOT SE 3	H336
Alkyl(C <sub>9-11</sub> )alcohol, ethoxylated	2 < C ≤ 4	Acute Tox. 4	H302
Cas No 68439-46-3		Eye Dam. 1	H318
Polymer			

The full text of hazard statements is specified in section 16.

\* Substance with occupational exposure limit

#### 4. First-aid measures

##### 4.1 Description of first aid measures

###### Inhalation

Remove to fresh air. If breathing is irregular seek medical advice immediately.

###### Skin contact

Take off all contaminated clothing and wash with plenty of water and soap. In case of irritation seek medical attention. Wash contaminated clothing before using them.

###### Eyes contact

Irrigate copiously with clean, fresh water for at least 15 minutes, keeping eyelids well- opened. Seek medical attention immediately.

###### Ingestion

Obtain medical attention immediately. Induce vomiting only if it is indicated by the doctor. Never give anything by mouth to an unconscious person.

###### Other

Change contaminated clothing.

##### 4.2. Most important symptoms and effects, both acute and delayed

Not available

##### 4.3. Indication of any immediate medical attention and special treatment needed

Not available

#### 5. Fire-fighting measures

##### 5.1 Extinguishing media

Advised extinguishing agents:

CO<sub>2</sub>, foam, chemical powder for flammable liquids.

##### Unappropriate extinction methods:

Water jets.

Water may not be effective to extinguish the fire, nevertheless it should be used to cool containers exposed to flames and prevent fires and explosions. For leakage and spillage that have not caught fire, nebulized water may be used to disperse the flammable vapors and protect the people involved in stopping the leakage.

##### 5.2. Special hazards arising from the substance or mixture

The product under fire condition may develop irritant/toxic gas (CO<sub>x</sub>)

##### 5.3. Advice for firefighters

Wear equipment complete with helmet and face shield and protection of the neck, breathing apparatus at pressure or demand, insulative jacket and trousers, with bands around the arms, legs and waist.

Closed containers exposed to heat from fire may build pressure and explode. Contaminated water used to extinguish fire must be disposed in accordance with the laws.

#### 6. Accidental release measures

##### 6.1. Personal precautions, protective equipment and emergency dust procedures

Avoid the contact with skin and eyes. In the case of vapor formation use suitable protective

devices. Supply a good air circulation. Move away any unauthorised person. Eliminate or exclude any source of ignition.

6.2. Environmental precautions

Collect the product in suitable container for disposal. Notify authorities if product enters sewer or public waters.

6.3. Methods and material for containment and cleaning up

Cover the spillage with inert absorbent material. Collect spilled material and place in containers for later disposal. Use water only to remove residuals, so as to prevent the spillage of the product in the sewers.

6.4 Reference to other sections

Refer to paragraphs 8 and 13 for more information

## 7. Handling and storage

7.1. Precautions for safe handling

Proper ventilation of the workplace. Vapours may ignite with explosion, it is therefore necessary to avoid accumulation keeping the windows and doors open, ensuring cross ventilation. Without adequate ventilation, the vapors may accumulate at the bottom and ignite at a distance, if triggered off, with the risk of flashback. Ground-bond container and receiving equipment during transfer operations and wear antistatic boots.

Avoid the accumulation of electrostatic charge: Use only non-sparking tools. The strong vigorous stirring and flow of the liquid in the pipes and equipment may cause the formation and accumulation of electrostatic charges due to the low conductivity of the product. To avoid the danger of fire and explosion never use compressed air during movement. Open containers with caution because they may be under pressure. Do not handle until you have read and understood all warnings.

7.2. Conditions for safe storage, including any incompatibilities

Store closed containers in a cool, well-ventilated area away from ignition sources. Keep away from heat, sparks and flames, do not smoke, use matches or lighters.

7.3. Specific end use(s)

For particular uses of the product, is necessary to refer to the specific information or contact the technical service of the Company.

## 8. Exposure controls/ personal protection

8.1. Control parameters

**Butanone:**

TLV: 600 mg/m<sup>3</sup>, 200 ppm (as TWA);900 mg/m<sup>3</sup>; 300 ppm (as STEL)

8.2 Exposure controls

Avoid all unnecessary exposure, handle in accordance with good industrial hygiene and safety procedures. Avoid contact with the eyes and skin .Do not eat, drink or smoke while handling it. Accurately wash the hands with soap and water before meals.

Individual protection

The DPI's choice must be done on the basis of the test's results obtained according to the rule EN 374

Hand protection : protective gloves of butyl rubber, latex viton.  
 Penetration time of glove material: the exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.  
 Eye protection : protective goggles  
 Skin protection : suitable protective clothing  
 Respiratory protection : mask with filter (Type ABEK)

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical and chemical properties	Value	Determination method
Appearance	colorless liquid	
Odour	characteristic	
Odour threshold	not available	
pH	6-7	
Melting point/freezing point	not available	
Initial boiling point and boiling range	not available	
Flash point	6° C	DIN EN ISO 3679
Evaporation rate	not available	
Flammability (solid, gas)	not pertinent	
Upper/lower flammability or explosive limits	not pertinent	
Vapour pressure	not available	
Vapour density	not available	
density	0.90 g/cm <sup>3</sup>	
Solubility	not pertinent	
Water solubility	not pertinent	
Partition coefficient: n-octanol/water	not available	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
Viscosity	not available	
Explosive properties	not explosive	
Oxidising properties	not oxidizing	

### 9.2. Other information

VOC (Directive 1999/13/CE): 28-32%

## 10. Stability and reactivity

### 10.1. Reactivity

In contact with strong oxidants exothermal reaction may occur.

**Butanone:** it reacts with light metals, such as aluminum, and with strong oxidizing agents.

**Butan-2-ol:** reacts with aluminum, when heated to 100° C.

### 10.2. Chemical stability

The product is stable in normal conditions of use and storage.

### 10.3. Possibility of hazardous reactions

**Butan-2-ol:** the substance can form explosive peroxides. Reacts with strong oxidants (as chromium trioxide) forming flammable / explosive gas (hydrogen).

### 10.4. Conditions to avoid

**Butan-2-ol:** avoid heat, sparks, open flames and other ignition sources.

### 10.5. Incompatible materials

**Butanone:** attacks different types of plastic.

**Butan-2-ol:** attacks some forms of plastic, rubber and coatings. Caustics, Amines, Alkanolamines, Aldehydes, Ammonia, Chlorinated Compounds, oxidizing agents

*10.6. Hazardous decomposition products*

Due to thermal decomposition or in the event of a fire vapours may be produced potentially dangerous to health (CO<sub>x</sub>).

**11. Toxicological information**

*11.1. Information on toxicological effects*

Acute effects:

ATE(mix) oral = 14285,7 mg/kg

- (a) acute toxicity: based on available data, the classification criteria are not met.
- (b) skin corrosion/irritation: based on available data, the classification criteria are not met.
- (c) serious eye damage/irritation: if brought into contact with eyes, the product causes serious damages to eyes, such as an opaque cornea or injury to iris.
- (d) respiratory or skin sensitization: based on available data, the classification criteria are not met.
- (e) germ cell mutagenicity: based on available data, the classification criteria are not met.
- (f) carcinogenicity: based on available data, the classification criteria are not met.
- (g) reproductive toxicity: based on available data, the classification criteria are not met.
- (h) specific target organ toxicity (STOT) single exposure: warning: vapours inhalation may cause sleepiness and giddiness
- (i) specific target organ toxicity (STOT) repeated exposure based on available data, the classification criteria are not met.
- (j) aspiration hazard: based on available data, the classification criteria are not met.

**Butanone:**

ROUTES OF EXPOSURE: the substance can be absorbed into the body by inhalation and ingestion.

RISKS FOR INHALATION: harmful contamination of air can be reached slowly by evaporation of the substance at 20°C.

EFFECTS OF SHORT TERM EXPOSURE: the substance is irritant to eyes and respiratory tract. The substance may cause effects on the central nervous system. Exposure far above OEL could cause lowering of consciousness.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: the liquid degrades the skin. Test on animals shows that this substance may be toxic for reproduction and human development.

ACUTE HAZARDS / SYMPTOMS

INHALATION Cough. Nausea. Vertigo. Headaches. Sleepiness. Vomiting.

EYES. Redness. Pain.

INGESTION. Unconsciousness. (Further see Inhalation).

NOTE: the odour is an insufficient advertising of overcoming of exposure limit.

LD50: 2193 mg/kg bw (oral, rat)

**Butan-2-ol:**

ROUTES OF EXPOSURE: the substance can be absorbed into the body by inhalation of its vapour and by ingestion.

INHALATION RISK: a harmful contamination of the air will be reached rather slowly by evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE: the substance is irritating to the eyes. Exposure far above the OEL may result in unconsciousness. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: the liquid degrades the skin.

ACUTE HAZARDS / SYMPTOMS

INHALATION Vertigo. Drowsiness. Headache.

SKIN Dry skin.

INGESTION Vertigo. Drowsiness  
EYES Redness. Pain.  
LD50: 2054 mg/kg bw (oral, rat)  
LD50: > 2000 mg/kg bw (dermal, rat)

## 12. Ecological information

### 12.1. Toxicity

Use this product according to good working practices. Avoid litter. Inform the competent authorities, should the product reach waterways or sewers or contaminate soil or vegetation.

#### **Butanone:**

LC50: 2993 mg/l/96h (Pimephales promelas)

EC50: 308 mg/l/48h (Daphnia Magna)

NOEC: 68 mg/l/48h (Daphnia Magna)

#### **Butan-2-ol**

LC50 3520 mg/L/48h (Leuciscus idus melanotus)

EC50: 2300 mg/L/24h (Daphnia magna)

### 12.2. Persistence and degradability:

**Butanone:** readily biodegradable. Degradability: 98% (28 days)

**Butan-2-ol:** readily biodegradable. Degradability: 86% (5 days)

BOD5: 2.15 g O<sub>2</sub>/g test mat.

COD: 2.49 g O<sub>2</sub>/g test mat.

### 12.3. Bioaccumulative potential:

**Butanone:** LogPow: 0,3

**Butan-2-ol:** log Pow: 0.6

### 12.4. Mobility in soil: not available

### 12.5. Results of PBT and vPvB assessment:

**Butanone:** the substance is not PBT / vPvB

**Butan-2-ol:** the substance is not PBT / vPvB

### 12.6. Other adverse effects: not available

This product doesn't contain AOX

## 13. Disposal considerations

### 13.1. Waste treatment methods

Operate following the current Local or National Laws.

The non reclaimed containers have to be disposed as the product.

## 14. Transport information

### 14.1. UN number

**1993**

If subject to the following characteristics is ADR exempt:

Combination packagings: per inner packaging 1 L per package 30 Kg

Inner packagings placed in skrink-wrapped or stretch-wrapped trays: per inner packaging 1 L per package 20 Kg





14.2. UN proper shipping name

**Flammable liquid, n.o.s (contains Butanone, Butan-2-ol)**

14.3. Transport hazard class(es)

Class : **3**

Label : **3**

Tunnel restriction code : D/E

Limited quantities : 1 L

EmS : F-E, S-E

14.4. Packing group

**II**

14.5. Environmental hazards

Product is not environmentally hazardous

Marine polluting agent : Not

14.6. Special precautions for user

No data available.

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

It is not intended to carry bulk

**15. Regulatory information**

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

Regulation	Cas	Substance
428/2009 ex CE 1334/2000 Ann.1	-	-
273/04 Tab.1 Cat.1	-	-
273/04 Tab.1 Cat.2	-	-
273/04 Tab.1 Cat.3	-	-
Reg. CE 1907/2006 Ann. XIV	-	-
Reg. CE 1907/2006 Substances SVHC	-	-
Reg. CE 1907/2006 Ann. XVII	-	-
2003/105/CE Ann.1 part 1	-	-
2003/105/CE Ann.1 part 2	-	-
2012/18/UE Ann.1 part 1	-	Mixture HIGHLY FLAMMABLE
2012/18/UE Ann.1 part 2	78-93-3 78-92-2	Butanone Butan-2-ol

15.2. Chemical safety assessment

none

**16. Other information**

**Description of the sentences of risk set out in paragraph 3:**

H225 = Highly flammable liquid and vapour

H319 = Causes serious eye irritation

H336 = May cause drowsiness or dizziness  
H226 = Flammable liquid and vapour  
H335 = May cause respiratory irritation  
H302 = Harmful if swallowed  
H318 = Causes serious eye damage.  
EUH066 - Repeated exposure may cause skin dryness or cracking

*Classification based by calculation on data of all components of the mixture.*

**GENERAL BIBLIOGRAPHY:**

1. Regolamento (CE) 1907/2006 del Parlamento Europeo (REACH)
2. Regolamento (CE) 1272/2008 del Parlamento Europeo (CLP) e successivi adeguamenti
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4. Regolamento (UE) 453/2010
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7. Handling Chemical Safety
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9. INRS - Fiche Toxicologique
10. Patty - Industrial Hygiene and Toxicology
11. N.I. Sax - Dangerous properties of Industrial Materials-7 Ed., 1989
12. ADR direttiva 2008/68/CE e successivi adeguamenti
13. ECHA Web site <http://echa.europa.eu/web/guest>
14. Directive 2012/18/UE
15. Directive 2009/161/UE

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