

# SAFETY DATA SHEET

Dated 8/9/2021

Version 4 8/9/2021

# INRAL

**Trade name: INRAL RADIATOR**

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

### 1.1 Product identifier

**Mixture identification:**

**Trade name:** INRAL RADIATOR

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

**Recommended use:**

Spray Paint

### 1.3 Details of the supplier of the safety data sheet

**Company:**

UAB TEGRA STATE  
Savanorių ave. 178A,  
LT-03154 Vilnius, Lithuania  
Tel. +37052661167  
www.tegrastate.lt  
E-mail: info@tegra.lt

### 1.4 Emergency telephone number

112


## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

 Danger, Aerosols 1, Extremely flammable aerosol. Pressurized container: may burst if heated.

 Warning, Eye Irrit. 2, Causes serious eye irritation.

 Warning, STOT SE 3, May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

**Adverse physicochemical, human health and environmental effects:**

No other hazards

### 2.2 Label elements

**Hazard pictograms:**



**Hazard statements:**

H222, H229 Extremely flammable aerosol. Pressurized container: may burst if heated.

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H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

#### 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.  
P211 Do not spray on an open flame or other ignition source.  
P251 Do not pierce or burn, even after use.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves and eye protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.  
P501 Dispose of contents/container in accordance with applicable regulations.

#### Special Provisions:

EUH066 Repeated exposure may cause skin dryness or cracking.  
EUH211 Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

#### Contains:

acetone; propan-2-one; propanone  
n-butyl acetate

#### Special provisions according to Annex XVII of REACH and subsequent amendments:

None

### 2.3 Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration  $\geq 0.1\%$

#### Other Hazards:

No other hazards

## SECTION 3: Composition/information on ingredients

### 3.1 Substances


N.A.


### 3.2 Mixtures

#### Hazardous components within the meaning of the CLP regulation and related classification:

$\geq 30\%$  -  $< 40\%$  acetone; propan-2-one; propanone

REACH No.: 01-2119471330-49, Index number: 606-001-00-8, CAS: 67-64-1, EC: 200-662-2

 2.6/2 Flam. Liq. 2 H225

 3.3/2 Eye Irrit. 2 H319

 3.8/3 STOT SE 3 H336

EUH066

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## **>= 25% - < 30% Hydrocarbons, C3-4; Petroleum gas**

REACH No.: 01-2119486557-22, Index number: 649-199-00-1, CAS: 68476-40-4, EC: 270-681-9

 2.2/1A Flam. Gas 1A H220

 2.5/L Press Gas (Liq.) H280

DECLK (CLP)\*

## **>= 15% - < 20% n-butyl acetate**

REACH No.: 01-2119485493-29, Index number: 607-025-00-1, CAS: 123-86-4, EC: 204-658-1

 2.6/3 Flam. Liq. 3 H226

 3.8/3 STOT SE 3 H336

EUH066

## **>= 2.5% - < 3% 2-butoxyethanol; ethylene glycol monobutyl ether**

REACH No.: 01-2119475108-36, Index number: 603-014-00-0, CAS: 111-76-2, EC: 203-905-0

 3.1/4/Inhal Acute Tox. 4 H332

 3.1/4/Oral Acute Tox. 4 H302

 3.2/2 Skin Irrit. 2 H315

 3.3/2 Eye Irrit. 2 H319

## **>= 1% - < 2.5% titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm]**

REACH No.: 01-2119489379-17, Index number: 022-006-00-2, CAS: 13463-67-7, EC: 236-675-5

 3.6/2 Carc. 2 H351

## **>= 0.25% - < 0.3% 2-methoxy-1-methylethyl acetate**

REACH No.: 01-2119475791-29, Index number: 607-195-00-7, CAS: 108-65-6, EC: 203-603-9

 2.6/3 Flam. Liq. 3 H226

 3.8/3 STOT SE 3 H336

## **>= 0.1% - < 0.25% reaction mass of ethylbenzene and xylene**


REACH No.: 01-2119539452-40, EC: 905-588-0

 2.6/3 Flam. Liq. 3 H226

 3.1/4/Dermal Acute Tox. 4 H312

 3.1/4/Inhal Acute Tox. 4 H332

 3.10/1 Asp. Tox. 1 H304

 3.2/2 Skin Irrit. 2 H315

 3.3/2 Eye Irrit. 2 H319

 3.8/3 STOT SE 3 H335

 3.9/2 STOT RE 2 H373

Specific Concentration Limits:

C >= 10%: STOT RE 2 H373

## **>= 0.1% - < 0.25% xylene (mixture of isomers)**

REACH No.: 01-2119488216-32, Index number: 601-022-00-9, CAS: 1330-20-7, EC: 215-535-7

 2.6/3 Flam. Liq. 3 H226

 3.10/1 Asp. Tox. 1 H304

 3.3/2 Eye Irrit. 2 H319

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- ⚠ 3.8/3 STOT SE 3 H335
- ⚠ 3.9/2 STOT RE 2 H373
- ⚠ 3.2/2 Skin Irrit. 2 H315
- ⚠ 3.1/4/Dermal Acute Tox. 4 H312
- ⚠ 3.1/4/Inhal Acute Tox. 4 H332
- 4.1/C3 Aquatic Chronic 3 H412

## **756 ppm ethylbenzene**

REACH No.: 01-2119489370-35, Index number: 601-023-00-4, CAS: 100-41-4, EC: 202-849-4

- ⚠ 2.6/2 Flam. Liq. 2 H225
- ⚠ 3.1/4/Inhal Acute Tox. 4 H332
- ⚠ 3.9/2 STOT RE 2 H373
- ⚠ 3.10/1 Asp. Tox. 1 H304

## **216 ppm Silicon dioxide, chemically prepared [CAS-No. 112945-52-5 resp. 7631-86-9]**

REACH No.: 01-2119379499-16, CAS: 7631-86-9, EC: 231-545-4

Substance with a Union workplace exposure limit.

## **216 ppm Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

REACH No.: 01-2119457273-39, EC: 918-481-9

- ⚠ 3.10/1 Asp. Tox. 1 H304
- EUH066

## **182 ppm 2-Pentanone oxime**

REACH No.: 01-0000020248-72, CAS: 623-40-5, EC: 484-470-6

- ⚠ 3.1/4/Oral Acute Tox. 4 H302
- ⚠ 3.3/2 Eye Irrit. 2 H319
- ⚠ 3.9/2 STOT RE 2 H373
- 4.1/C3 Aquatic Chronic 3 H412

## **8 ppm 1-methoxy-2-propanol; monopropylene glycol methyl ether**

REACH No.: 01-2119457435-35, Index number: 603-064-00-3, CAS: 107-98-2, EC: 203-539-1

- ⚠ 2.6/3 Flam. Liq. 3 H226
- ⚠ 3.8/3 STOT SE 3 H336

\*DECLK (CLP): Substance classified in accordance with Note K, Annex VI of EC Regulation (EC) 1272/2008. The harmonised classification as a carcinogen or mutagen applies unless it can be shown that the substance contains less than 0,1 % w/w 1,3- butadiene (Einecs No 203-450-8), in which case a classification in accordance with Title II of this Regulation shall be performed also for those hazard classes. Where the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P210-P403 shall apply.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### **In case of skin contact:**

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

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Wash thoroughly the body (shower or bath).  
Remove contaminated clothing immediately and dispose off safely.  
After contact with skin, wash immediately with soap and plenty of water.

**In case of eyes contact:**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.  
Protect uninjured eye.

**In case of Ingestion:**

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

**In case of Inhalation:**

Remove casualty to fresh air and keep warm and at rest.

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

None

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**Treatment:**

None

## SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing media:**

CO<sup>2</sup> or Dry chemical fire extinguisher.

**Extinguishing media which must not be used for safety reasons:**

None in particular.

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

Do not inhale explosion and combustion gases.  
Burning produces heavy smoke.

#### 5.3 Advice for firefighters

The heat causes an increase in pressure inside the container with danger of bursting. In case of fire the aerosols bursting can be projected to distance with violence, with risk of propagation of the fire.

Use suitable breathing apparatus.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

## SECTION 6: Accidental release measures

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

Wear personal protection equipment.  
Remove all sources of ignition.

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Remove persons to safety.  
See protective measures under point 7 and 8.

## 6.2 Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.  
Retain contaminated washing water and dispose it.  
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.  
Suitable material for taking up: absorbing material, organic, sand.

## 6.3 Methods and material for containment and cleaning up

Wash with plenty of water.

## 6.4 Reference to other sections

See also section 8 and 13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.  
Don't use empty container before they have been cleaned.  
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.  
See also section 8 for recommended protective equipment.

#### **Advice on general occupational hygiene:**

Contaminated clothing should be changed before entering eating areas.  
Do not eat or drink while working.

### 7.2 Conditions for safe storage, including any incompatibilities

Vapours are more weighty than air. Vapours may form explosive mixture with air.  
Store at below 20 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.  
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.  
Keep away from food, drink and feed.

#### **Incompatible materials:**

None in particular.

#### **Instructions as regards storage premises:**

Cool and adequately ventilated.

#### **Provisions related to directive EU 2012/18 (Seveso III):**

Seveso III category according to Annex 1, part 1

Product belongs to category:	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
P3a	150	500

### 7.3 Specific end use(s)

None in particular

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### **acetone; propan-2-one; propanone - CAS: 67-64-1**

EU - TWA(8h): 1210 mg/m<sup>3</sup>, 500 ppm

ACGIH - TWA(8h): 250 ppm - STEL: 500 ppm - Notes: A4, BEI - URT and eye irr, CNS impair

MAK - TWA(8h): 1200 mg/m<sup>3</sup>, 500 ppm - STEL: 2400 mg/m<sup>3</sup>, 1000 ppm - Notes: SWISS

National - TWA(8h): 1210 mg/m<sup>3</sup>, 500 ppm - STEL: 3620 mg/m<sup>3</sup>, 1500 ppm - Notes: HR - CROATIA

#### **Hydrocarbons, C3-4; Petroleum gas - CAS: 68476-40-4**

EU - TWA(8h): 1000 ppm

ACGIH - TWA(8h): 1000 ppm

#### **n-butyl acetate - CAS: 123-86-4**

ACGIH - TWA(8h): 50 ppm - STEL: 150 ppm - Notes: Eye and URT irr

MAK - TWA(8h): 480 mg/m<sup>3</sup>, 100 ppm - STEL: 960 mg/m<sup>3</sup>, 200 ppm - Notes: GERMANY

GVI - TWA(8h): 724 mg/m<sup>3</sup>, 150 ppm - STEL: 966 mg/m<sup>3</sup>, 200 ppm - Notes: CROATIA

VLA - TWA(8h): 724 mg/m<sup>3</sup>, 150 ppm - STEL: 965 mg/m<sup>3</sup>, 200 ppm - Notes: SPAIN

TLV - TWA(8h): 950 mg/m<sup>3</sup> - STEL: 1200 mg/m<sup>3</sup> - Notes: CZECH REPUBLIC

VLEP - TWA(8h): 710 mg/m<sup>3</sup>, 150 ppm - STEL: 940 mg/m<sup>3</sup>, 200 ppm - Notes: FRANCE

National - TWA(8h): 724 mg/m<sup>3</sup>, 150 ppm - STEL: 966 mg/m<sup>3</sup>, 200 ppm - Notes: UNITED KINGDOM

MAK - TWA(8h): 480 mg/m<sup>3</sup>, 100 ppm - STEL: 960 mg/m<sup>3</sup>, 200 ppm - Notes: SWISS

EU - TWA(8h): 241 mg/m<sup>3</sup>, 50 ppm - STEL: 723 mg/m<sup>3</sup>, 150 ppm

#### **2-butoxyethanol; ethylene glycol monobutyl ether - CAS: 111-76-2**

EU - TWA(8h): 98 mg/m<sup>3</sup>, 20 ppm - STEL: 246 mg/m<sup>3</sup>, 50 ppm - Notes: Skin

ACGIH - TWA(8h): 20 ppm - Notes: A3, BEI - Eye and URT irr

MAK - TWA(8h): 49 mg/m<sup>3</sup>, 10 ppm - STEL: 98 mg/m<sup>3</sup>, 20 ppm - Notes: SWISS

MAK - TWA(8h): 98 mg/m<sup>3</sup>, 20 ppm - STEL(): 200 mg/m<sup>3</sup>, 40 ppm - Notes: AUSTRIA

TLV - TWA(8h): 100 mg/m<sup>3</sup> - STEL(): 200 mg/m<sup>3</sup> - Notes: CZECH REPUBLIC

MAK - TWA(8h): 49 mg/m<sup>3</sup>, 10 ppm - STEL(): 98 mg/m<sup>3</sup>, 20 ppm - Notes: GERMANY

VLEP - TWA(8h): 49 mg/m<sup>3</sup>, 10 ppm - STEL(): 246 mg/m<sup>3</sup>, 50 ppm - Notes: FRANCE

National - TWA(8h): 123 mg/m<sup>3</sup>, 25 ppm - STEL(): 246 mg/m<sup>3</sup>, 50 ppm - Notes: UNITED KINGDOM: Skin

National - TWA(8h): 98 mg/m<sup>3</sup>, 20 ppm - STEL(): 245 mg/m<sup>3</sup>, 50 ppm - Notes: SPAIN

#### **titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm] - CAS: 13463-67-7**

ACGIH - TWA(8h): 10 mg/m<sup>3</sup> - Notes: A4 - LRT irr

#### **2-methoxy-1-methylethyl acetate - CAS: 108-65-6**

EU - TWA(8h): 275 mg/m<sup>3</sup>, 50 ppm - STEL: 550 mg/m<sup>3</sup>, 100 ppm - Notes: Skin

MAK - TWA(8h): 275 mg/m<sup>3</sup>, 50 ppm - STEL: 275 mg/m<sup>3</sup>, 50 ppm - Notes: SWISS

MAK - TWA(8h): 270 mg/m<sup>3</sup>, 50 ppm - STEL: 270 mg/m<sup>3</sup>, 50 ppm - Notes: GERMANY

National - TWA(8h): 274 mg/m<sup>3</sup>, 50 ppm - STEL: 548 mg/m<sup>3</sup>, 100 ppm - Notes: GREAT BRITAIN

#### **reaction mass of ethylbenzene and xylene**

EU - TWA(8h): 221 mg/m<sup>3</sup>, 50 ppm - STEL: 442 mg/m<sup>3</sup>, 100 ppm - Notes: Bold-type:

Indicative Occupational Exposure Limit Values [2,3] and Limit Values for Occupational Exposure [4] (for references see bibliography)

ACGIH - TWA(8h): 100 ppm - STEL: 150 ppm - Notes: A4, BEI - URT and eye irr, CNS impair

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## **xylene (mixture of isomers) - CAS: 1330-20-7**

EU - TWA(8h): 221 mg/m<sup>3</sup>, 50 ppm - STEL: 442 mg/m<sup>3</sup>, 100 ppm - Notes: Skin  
ACGIH - TWA(8h): 100 ppm - STEL: 150 ppm - Notes: A4, BEI - URT and eye irr, CNS impair  
MAK - TWA(8h): 435 mg/m<sup>3</sup>, 100 ppm - STEL: 870 mg/m<sup>3</sup>, 200 ppm - Notes: CH - SWISS

## **ethylbenzene - CAS: 100-41-4**

EU - TWA(8h): 442 mg/m<sup>3</sup>, 100 ppm - STEL: 884 mg/m<sup>3</sup>, 200 ppm - Notes: Skin  
ACGIH - TWA(8h): 20 ppm - Notes: A3, BEI - URT irr, kidney dam (nephropathy), cochlear impair  
MAK - TWA(8h): 220 mg/m<sup>3</sup>, 50 ppm - STEL: 220 mg/m<sup>3</sup>, 50 ppm - Notes: SWISS  
National - TWA(8h): 442 mg/m<sup>3</sup>, 100 ppm - STEL: 884 mg/m<sup>3</sup>, 200 ppm - Notes: CROATIA - K (Skin)

## **Silicon dioxide, chemically prepared [CAS-No. 112945-52-5 resp. 7631-86-9] - CAS: 7631-86-9**

EU - TWA(8h): 3 mg/m<sup>3</sup> - Notes: Type of exposure: Respirable Particles (IT)  
EU - TWA(8h): 10 mg/m<sup>3</sup> - Notes: Type of exposure: Inhalable particles (IT)  
MAK - TWA(8h): 4 mg/m<sup>3</sup> - Notes: SWISS, SSc

## **Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

EU - TWA(8h): 1200 mg/m<sup>3</sup>

## **1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2**

EU - TWA(8h): 375 mg/m<sup>3</sup>, 100 ppm - STEL: 563 mg/m<sup>3</sup>, 150 ppm - Notes: Skin  
ACGIH - TWA(8h): 50 ppm - STEL: 100 ppm - Notes: A4 - Eye and URT irr  
MAK - TWA(8h): 360 mg/m<sup>3</sup>, 100 ppm - STEL: 720 mg/m<sup>3</sup>, 200 ppm - Notes: CH - SWISS  
MAK - TWA(8h): 187 mg/m<sup>3</sup>, 50 ppm - STEL(): 187 mg/m<sup>3</sup>, 50 ppm - Notes: A - AUSTRIA  
TLV - TWA(8h): 270 mg/m<sup>3</sup> - STEL(): 550 mg/m<sup>3</sup> - Notes: CZ - CZECH REP.  
MAK - TWA(8h): 370 mg/m<sup>3</sup>, 100 ppm - STEL(): 740 mg/m<sup>3</sup>, 200 ppm - Notes: DE - GERMANY  
VLEP - TWA(8h): 188 mg/m<sup>3</sup>, 50 ppm - STEL(): 375 mg/m<sup>3</sup>, 10 ppm - Notes: FR - FRANCE  
GVI - TWA(8h): 375 mg/m<sup>3</sup>, 100 ppm - STEL: 568 mg/m<sup>3</sup>, 150 ppm - Notes: HR - CROATIA: K (Skin)

## **DNEL Exposure Limit Values**

### **acetone; propan-2-one; propanone - CAS: 67-64-1**

Worker Industry: 186 mg/kg - Worker Professional: 186 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects  
Worker Industry: 2420 mg/m<sup>3</sup> - Worker Professional: 2420 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Short Term, local effects  
Worker Industry: 1210 mg/m<sup>3</sup> - Worker Professional: 1210 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effects  
Consumer: 62 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects  
Consumer: 62 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects  
Consumer: 200 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

### **n-butyl acetate - CAS: 123-86-4**

Worker Industry: 600 mg/m<sup>3</sup> - Worker Professional: 600 mg/m<sup>3</sup> - Consumer: 300 mg/m<sup>3</sup>  
- Exposure: Human Inhalation - Frequency: Short Term, local effects  
Worker Industry: 300 mg/m<sup>3</sup> - Worker Professional: 300 mg/m<sup>3</sup> - Consumer: 35.7 mg/m<sup>3</sup>  
- Exposure: Human Inhalation - Frequency: Long Term, systemic effects  
Worker Industry: 11 mg/kg - Worker Professional: 11 mg/kg - Consumer: 6 mg/kg -  
Exposure: Human Dermal - Frequency: Long Term, systemic effects  
Consumer: 2 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

### **2-butoxyethanol; ethylene glycol monobutyl ether - CAS: 111-76-2**

Worker Industry: 89 mg/kg - Consumer: 89 mg/kg - Exposure: Human Dermal -

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Frequency: Short Term, systemic effects  
Worker Industry: 1091 mg/m<sup>3</sup> - Consumer: 426 mg/m<sup>3</sup> - Exposure: Human Inhalation -  
Frequency: Short Term, systemic effects  
Worker Industry: 246 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Short Term, local effects  
Worker Industry: 125 mg/kg - Consumer: 75 mg/kg - Exposure: Human Dermal -  
Frequency: Long Term, systemic effects  
Worker Industry: 98 mg/m<sup>3</sup> - Consumer: 59 mg/m<sup>3</sup> - Exposure: Human Inhalation -  
Frequency: Long Term, systemic effects  
Consumer: 147 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, local effects  
Consumer: 26.7 mg/kg - Exposure: Human Oral - Frequency: Short Term, systemic effects  
Consumer: 6.3 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm]  
- CAS: 13463-67-7**

Worker Industry: 10 mg/m<sup>3</sup> - Worker Professional: 10 mg/m<sup>3</sup> - Exposure: Human  
Inhalation - Frequency: Long Term, local effects  
Consumer: 700 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

**2-methoxy-1-methylethyl acetate - CAS: 108-65-6**

Consumer: 36 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects  
Worker Industry: 275 mg/m<sup>3</sup> - Worker Professional: 275 mg/m<sup>3</sup> - Consumer: 33 mg/m<sup>3</sup> -  
Exposure: Human Inhalation - Frequency: Long Term, systemic effects  
Worker Industry: 796 mg/kg - Worker Professional: 796 mg/kg - Consumer: 320 mg/kg -  
Exposure: Human Dermal - Frequency: Long Term, systemic effects  
Worker Industry: 550 mg/m<sup>3</sup> - Worker Professional: 550 mg/m<sup>3</sup> - Exposure: Human  
Inhalation - Frequency: Short Term, local effects  
Consumer: 500 mg/kg - Exposure: Human Oral - Frequency: Short Term, systemic effects

**reaction mass of ethylbenzene and xylene**

Worker Industry: 289 mg/m<sup>3</sup> - Worker Professional: 289 mg/m<sup>3</sup> - Consumer: 174 mg/m<sup>3</sup>  
- Exposure: Human Inhalation - Frequency: Short Term, systemic effects  
Worker Industry: 180 mg/kg - Worker Professional: 180 mg/kg - Consumer: 108 mg/kg -  
Exposure: Human Dermal - Frequency: Long Term, systemic effects  
Consumer: 1.6 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

**xylene (mixture of isomers) - CAS: 1330-20-7**

Worker Industry: 289 mg/m<sup>3</sup> - Worker Professional: 289 mg/m<sup>3</sup> - Consumer: 174 mg/m<sup>3</sup>  
- Exposure: Human Inhalation - Frequency: Short Term, local effects  
Worker Industry: 180 mg/kg - Worker Professional: 180 mg/kg - Consumer: 108 mg/kg -  
Exposure: Human Dermal - Frequency: Long Term, systemic effects  
Worker Industry: 77 mg/m<sup>3</sup> - Worker Professional: 77 mg/m<sup>3</sup> - Consumer: 14.8 mg/m<sup>3</sup> -  
Exposure: Human Inhalation - Frequency: Long Term, systemic effects  
Consumer: 1.6 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

**ethylbenzene - CAS: 100-41-4**

Worker Industry: 77 mg/m<sup>3</sup> - Worker Professional: 77 mg/m<sup>3</sup> - Consumer: 15 mg/m<sup>3</sup> -  
Exposure: Human Inhalation - Frequency: Long Term, systemic effects  
Worker Industry: 293 mg/m<sup>3</sup> - Worker Professional: 293 mg/m<sup>3</sup> - Exposure: Human  
Inhalation - Frequency: Short Term, systemic effects  
Worker Industry: 180 mg/kg - Worker Professional: 180 mg/kg - Exposure: Human  
Dermal - Frequency: Long Term, systemic effects  
Consumer: 1.6 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

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**Trade name: INRAL RADIATOR**

## **Silicon dioxide, chemically prepared [CAS-No. 112945-52-5 resp. 7631-86-9] - CAS: 7631-86-9**

Worker Industry: 4 mg/m<sup>3</sup> - Worker Professional: 4 mg/m<sup>3</sup> - Exposure: Human Inhalation

- Frequency: Short Term, local effects

Worker Industry: 4 mg/m<sup>3</sup> - Worker Professional: 4 mg/m<sup>3</sup> - Frequency: Long Term, systemic effects

## **Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

Worker Industry: 300 mg/kg - Worker Professional: 300 mg/kg - Consumer: 300 mg/kg -

Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Industry: 1300 mg/m<sup>3</sup> - Worker Professional: 1300 mg/m<sup>3</sup> - Consumer: 900 mg/m<sup>3</sup> - Exposure: Human

Inhalation - Frequency: Long Term, systemic effects

Consumer: 300 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Worker Industry: 840 mg/m<sup>3</sup> - Worker Professional: 840 mg/m<sup>3</sup> - Exposure: Human

Inhalation - Frequency: Long Term, local effects

Worker Industry: 1100 mg/m<sup>3</sup> - Worker Professional: 1100 mg/m<sup>3</sup> - Exposure: Human

Inhalation - Frequency: Short Term, local effects

## **2-Pentanone oxime - CAS: 623-40-5**

Worker Industry: 25 mg/m<sup>3</sup> - Worker Professional: 25 mg/m<sup>3</sup> - Consumer: 6.22 mg/m<sup>3</sup> -

Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 75 mg/m<sup>3</sup> - Worker Professional: 75 mg/m<sup>3</sup> - Consumer: 18.66 mg/m<sup>3</sup> -

Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Worker Industry: 0.208 mg/kg - Worker Professional: 0.208 mg/kg - Consumer: 0.125 mg/kg - Exposure: Human Dermal

- Frequency: Long Term, systemic effects

Worker Industry: 0.624 mg/kg - Worker Professional: 0.624 mg/kg - Consumer: 0.375 mg/kg - Exposure: Human Dermal

- Frequency: Short Term, systemic effects

Consumer: 0.125 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

## **1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2**

Consumer: 3.3 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Worker Industry: 369 mg/m<sup>3</sup> - Worker Professional: 369 mg/m<sup>3</sup> - Consumer: 43.9 mg/m<sup>3</sup>

- Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 183 mg/kg - Worker Professional: 183 mg/m<sup>3</sup> - Consumer: 78 mg/m<sup>3</sup> -

Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Industry: 553.5 mg/m<sup>3</sup> - Worker Professional: 553.5 mg/m<sup>3</sup> - Exposure: Human

Inhalation - Frequency: Short Term, local effects

## **PNEC Exposure Limit Values**

### **acetone; propan-2-one; propanone - CAS: 67-64-1**

Target: Freshwater sediments - Value: 30.4 mg/kg

Target: Marine water sediments - Value: 3.04 mg/kg

Target: Soil (agricultural) - Value: 29.5 mg/kg

Target: Fresh Water - Value: 10.6 mg/l

Target: Marine water - Value: 1.06 mg/l

### **n-butyl acetate - CAS: 123-86-4**

Target: Fresh Water - Value: 0.18 mg/l

Target: Marine water - Value: 0.018 mg/l

Target: Freshwater sediments - Value: 0.981 mg/kg

Target: Marine water sediments - Value: 0.0981 mg/kg

Target: Soil (agricultural) - Value: 0.0903 mg/kg

### **2-butoxyethanol; ethylene glycol monobutyl ether - CAS: 111-76-2**

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Target: Freshwater sediments - Value: 34.6 mg/kg  
Target: Marine water sediments - Value: 3.46 mg/kg  
Target: Soil (agricultural) - Value: 2.33 mg/kg  
Target: Fresh Water - Value: 8.8 mg/l  
Target: Marine water - Value: 0.88 mg/l

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm]  
- CAS: 13463-67-7**

Target: Fresh Water - Value: 0.184 mg/l  
Target: Freshwater sediments - Value: 1000 mg/kg  
Target: Marine water - Value: 0.0184 mg/l  
Target: Marine water sediments - Value: 100 mg/kg  
Target: Soil (agricultural) - Value: 100 mg/kg

**2-methoxy-1-methylethyl acetate - CAS: 108-65-6**

Target: Fresh Water - Value: 0.635 mg/l  
Target: Freshwater sediments - Value: 3.29 mg/kg  
Target: Marine water sediments - Value: 0.329 mg/kg  
Target: Microorganisms in sewage treatments - Value: 100 mg/l

**reaction mass of ethylbenzene and xylene**

Target: Fresh Water - Value: 0.327 mg/l  
Target: Marine water - Value: 0.327 mg/l  
Target: Freshwater sediments - Value: 12.46 mg/kg  
Target: Marine water sediments - Value: 12.46 mg/kg  
Target: Soil (agricultural) - Value: 2.31 mg/kg

**xylene (mixture of isomers) - CAS: 1330-20-7**

Target: Fresh Water - Value: 0.327 mg/l  
Target: Marine water - Value: 0.327 mg/l  
Target: Freshwater sediments - Value: 12.46 mg/kg  
Target: Marine water sediments - Value: 12.46 mg/kg  
Target: Soil (agricultural) - Value: 2.31 mg/l

**ethylbenzene - CAS: 100-41-4**

Target: Fresh Water - Value: 0.1 mg/l  
Target: Marine water - Value: 0.01 mg/l  
Target: Freshwater sediments - Value: 13.7 mg/kg  
Target: Marine water sediments - Value: 1.37 mg/kg  
Target: Soil (agricultural) - Value: 2.68 mg/kg

**2-Pentanone oxime - CAS: 623-40-5**

Target: Fresh Water - Value: 0.088 mg/l - Notes:: Assessment factor: 1000  
Target: Marine water - Value: 0.0088 mg/l - Notes:: Assessment factor: 1000  
Target: Freshwater sediments - Value: 05 mg/kg  
Target: Marine water sediments - Value: 0.05 mg/kg  
Target: Soil (agricultural) - Value: 0.05 mg/kg

**1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2**

Target: Fresh Water - Value: 10 mg/l  
Target: Freshwater sediments - Value: 52.3 mg/kg  
Target: Marine water sediments - Value: 5.2 mg/kg  
Target: Microorganisms in sewage treatments - Value: 100 mg/l

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Target: Soil (agricultural) - Value: 4.59 mg/kg

## 8.2 Exposure controls

### Eye protection:

Eye glasses with side protection.

### Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

### Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

### Respiratory protection:

Use adequate protective respiratory equipment.

### Thermal Hazards:

None

### Environmental exposure controls:

None

### Appropriate engineering controls:

None

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Properties	Value	Method:	Notes:
Physical state:	Liquid	--	--
Colour:	Pigmented	--	--
Odour:	Characteristic	--	--
Melting point/freezing point:	N.A.	--	--
Boiling point or initial boiling point and boiling range:	N.A.	--	--
Flammability:	Flammable	--	--
Lower and upper explosion limit:	1.8 ÷ 9.5 % Vol.	--	--
Flash point:	<0 °C	--	--
Auto-ignition temperature:	>400 °C	--	--
Decomposition temperature:	N.A.	--	--
pH:	Not Relevant	--	--
Kinematic viscosity:	>20,5 mm <sup>2</sup> /s (40 °C)	--	--
Solubility in water:	NO	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient noctanol/water (log value):	N.A.	--	--
Vapour pressure:	4.5 bar +/- 0.5 20 °C	--	--
Density and/or relative density:	0.75 +/- 0.05	--	--
Relative vapour density:	>1 (air=1)	--	--
Deformation Pressure:	15 bar	--	--
Explosion Pressure:	16 ÷ 20 bar	--	--

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Volatile organic compounds - VOC	630 g/l	--	--
Volatile organic compounds - VOC	84%	--	--
Particle characteristics:			
Particle size:	N.A.	--	--

## 9.2 Other information

No other relevant information

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under normal conditions.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

None.

### 10.4 Conditions to avoid

Stable under normal conditions.

### 10.5 Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

### 10.6 Hazardous decomposition products

None.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Toxicological information of the product:

##### RADIATOR

##### a) acute toxicity

Not classified

Based on available data, the classification criteria are not met

##### b) skin corrosion/irritation

Not classified

Based on available data, the classification criteria are not met

##### c) serious eye damage/irritation

The product is classified: Eye Irrit. 2 H319

##### d) respiratory or skin sensitisation

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**Trade name: INRAL RADIATOR**

Not classified

Based on available data, the classification criteria are not met

**e) germ cell mutagenicity**

Not classified

Based on available data, the classification criteria are not met

**f) carcinogenicity**

Not classified

Based on available data, the classification criteria are not met

**g) reproductive toxicity**

Not classified

Based on available data, the classification criteria are not met

**h) STOT-single exposure**

The product is classified: STOT SE 3 H336

i) STOT-repeated exposure

Not classified

Based on available data, the classification criteria are not met

**j) aspiration hazard**

Not classified

Based on available data, the classification criteria are not met

**Toxicological information of the main substances found in the product:**

**acetone; propan-2-one; propanone - CAS: 67-64-1**

**a) acute toxicity:**

Test: LD50 - Route: Oral - Species: Rat = 5800 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 20 ml/kg

Test: LC50 - Route: Inhalation - Species: Rat = 76 mg/l - Duration: 4h

**b) skin corrosion/irritation:**

Test: Skin Irritant Positive

**Hydrocarbons, C3-4; Petroleum gas - CAS: 68476-40-4**

**a) acute toxicity:**

Test: LC50 - Route: Inhalation - Species: Rat > 800000 ppm - Duration: 15MIN

Test: LC50 - Route: Inhalation - Species: Rat = 1442738 mg/m<sup>3</sup> - Duration: 15MIN

Test: LC50 - Route: Inhalation - Species: Rat = 1443 mg/l - Duration: 15MIN

**n-butyl acetate - CAS: 123-86-4**

**a) acute toxicity:**

Test: LD50 - Route: Oral - Species: Rat = 10736 mg/kg - Source: (FEMALE)

Test: LD50 - Route: Skin - Species: Rabbit > 14000 mg/kg - Source: OCSE 402

Test: LC50 - Route: Inhalation - Species: Rat > 21.1 mg/l - Duration: 4h - Source: OCSE 403

**2-butoxyethanol; ethylene glycol monobutyl ether - CAS: 111-76-2**

**a) acute toxicity**

ATE - Oral 1200 mg/kg bw

Test: LC50 - Route: Inhalation - Species: Rat = 20 ppm - Duration: 4h

Test: LD50 - Route: Oral - Species: Rat = 1746 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg

**titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm] - CAS: 13463-67-7**

**a) acute toxicity:**

Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 5000 mg/kg

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**Trade name: INRAL RADIATOR**

Test: LC50 - Route: Inhalation - Species: Rat > 6.8 mg/l - Duration: 4h

**b) skin corrosion/irritation:**

Test: Skin Irritant No

**c) serious eye damage/irritation:**

Test: Eye Irritant No

**e) germ cell mutagenicity:**

Test: Mutagenesis No

**2-methoxy-1-methylethyl acetate - CAS: 108-65-6**

**a) acute toxicity:**

Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 5000 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat > 23.5 mg/l

**reaction mass of ethylbenzene and xylene**

**a) acute toxicity:**

Test: LD50 - Route: Oral - Species: Rat = 3523 mg/kg - Notes: (EU Method B.1)

Test: LC50 - Route: Inhalation - Species: Rat = 27571 mg/l - Duration: 4h - Notes: (EU Method B.2)

Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/l

**i) STOT-repeated exposure:**

Test: NOAEL - Route: Oral - Species: Rat = 250 mg/kg bw

**xylene (mixture of isomers) - CAS: 1330-20-7**

**a) acute toxicity:**

Test: LC50 - Route: Inhalation - Species: Rat > 20 mg/l - Duration: 4h

Test: LD50 - Route: Oral - Species: Rat = 3500 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 4200 ml/kg

**ethylbenzene - CAS: 100-41-4**

**a) acute toxicity:**

Test: LD50 - Route: Skin - Species: Rabbit = 17800 mg/kg

Test: LD50 - Route: Oral - Species: Rat = 3500 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat = 4000 mg/l - Duration: 4h

**Silicon dioxide, chemically prepared [CAS-No. 112945-52-5 resp. 7631-86-9] - CAS: 7631-86-9**

**a) acute toxicity:**

Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 5000 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat > 0.139 mg/l - Duration: 4h

**Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

**a) acute toxicity:**

Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg

Test: LD50 - Route: Skin - Species: Rat > 5000 mg/kg

**2-Pentanone oxime - CAS: 623-40-5**

**a) acute toxicity:**

Test: LD50 - Route: Oral - Species: Rat = 1133 mg/kg - Source: OECD TG 425

Test: LC50 - Route: Inhalation - Species: Rat > 295 ppm - Duration: 4h - Source: OECD TG 403

**b) skin corrosion/irritation:**

Test: Skin Irritant - Route: Skin - Species: Rabbit Negative - Source: OCSE Nr.439

**c) serious eye damage/irritation:**

Test: Eye Irritant - Species: Rabbit Positive - Source: OECD TG 405

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Trade name: INRAL RADIATOR

## e) germ cell mutagenicity:

Negative

## g) reproductive toxicity:

Test: NOAEL - Route: Oral - Species: Rat = 150 mg/kg bw

## 1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

### a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 4016 mg/kg

Test: LD50 - Route: Skin - Species: Rat = 2000 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat > 54.6 mg/l - Duration: 4h

Test: LC50 - Route: Inhalation Vapour - Species: Rat > 7000 ppm - Duration: 8h

### b) skin corrosion/irritation:

Test: Skin Irritant - Species: Rat Negative

### d) respiratory or skin sensitisation:

Test: Respiratory Sensitization No

## 11.2 Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration  $\geq 0.1\%$

## SECTION 12: Ecological information

### 12.1 Toxicity

Adopt good working practices, so that the product is not released into the environment.

WGK: 1

#### RADIATOR

Not classified for environmental hazards

Based on available data, the classification criteria are not met

#### acetone; propan-2-one; propanone - CAS: 67-64-1

##### a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Algae = 530 mg/l - Notes: 8 d

Endpoint: LC50 - Species: Fish = 8120 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia = 8800 mg/l - Duration h: 48

##### b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Daphnia = 2212 mg/l - Notes: 28 d

#### n-butyl acetate - CAS: 123-86-4

##### a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia = 44 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae = 675 mg/l - Duration h: 72

Endpoint: LC50 - Species: Fish = 18 mg/l - Duration h: 96 - Notes: OECD 203

#### 2-butoxyethanol; ethylene glycol monobutyl ether - CAS: 111-76-2

##### a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia = 1550 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae = 911 mg/l - Duration h: 72

Endpoint: LC50 - Species: Fish = 1474 mg/l - Duration h: 96



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**Trade name: INRAL RADIATOR**

## **b) Aquatic chronic toxicity:**

Endpoint: NOEC - Species: Fish > 100 mg/l - Notes: 21 d

Endpoint: NOEC - Species: Daphnia = 100 mg/l - Notes: 21 d

## **titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm] - CAS: 13463-67-7**

### **a) Aquatic acute toxicity:**

Endpoint: LC50 - Species: Fish > 1000 mg/l - Duration h: 96 - Notes: EPA-540/9-85-006

FRESHWATER FISH

Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96 - Notes: OECD 203

FRESHWATER FISH

Endpoint: LC50 - Species: Fish > 10000 mg/l - Duration h: 96 - Notes: OECD 203

SEAWATER FISH

Endpoint: LC50 - Species: Daphnia > 100 mg/l - Duration h: 48 - Notes: OECD 202

FRESHWATER

Endpoint: LC50 - Species: Daphnia > 10000 mg/l - Duration h: 48 - Notes: ISO 14669;

ISO 5667-16 SEAWATER

Endpoint: EC50 - Species: Algae = 16 mg/l - Duration h: 72 - Notes: EPA-600-9/78-018

FRESHWATER

Endpoint: EC50 - Species: Algae > 10000 mg/l - Duration h: 72 - Notes: ISO 10253

SEAWATER

## **2-methoxy-1-methylethyl acetate - CAS: 108-65-6**

### **a) Aquatic acute toxicity:**

Endpoint: LC50 - Species: Fish = 134 mg/l - Duration h: 96

Endpoint: EC50 - Species: Algae > 1000 mg/l - Duration h: 72

Endpoint: EC50 - Species: Daphnia > 500 mg/l - Duration h: 48

### **b) Aquatic chronic toxicity:**

Endpoint: NOEC - Species: Daphnia > 100 mg/l - Notes: 21 d

## **reaction mass of ethylbenzene and xylene**

### **a) Aquatic acute toxicity:**

Endpoint: LC50 - Species: Fish = 2.6 mg/l - Duration h: 96

Endpoint: EC50 - Species: Algae = 2.2 mg/l - Duration h: 72

## **xylene (mixture of isomers) - CAS: 1330-20-7**

### **a) Aquatic acute toxicity:**

Endpoint: EC50 - Species: Daphnia = 1 mg/l - Duration h: 24

Endpoint: LC50 - Species: Fish = 2.6 mg/l - Duration h: 96

Endpoint: NOEC - Species: Algae = 0.44 mg/l - Duration h: 73

### **b) Aquatic chronic toxicity:**

Endpoint: NOEC - Species: Daphnia = 1.57 mg/l - Duration h: 504

Endpoint: NOEC - Species: Fish > 1.3 mg/l - Duration h: 1344

## **ethylbenzene - CAS: 100-41-4**

### **a) Aquatic acute toxicity:**

Endpoint: EC50 - Species: Daphnia = 75 mg/l - Duration h: 48 - Notes: Daphnia magna

Endpoint: LC50 - Species: Fish = 48.5 mg/l - Duration h: 96 - Notes: Phimephales

## **Silicon dioxide, chemically prepared [CAS-No. 112945-52-5 resp. 7631-86-9] - CAS: 7631-86-9**

### **a) Aquatic acute toxicity:**

Endpoint: EC50 - Species: Daphnia > 1000 mg/l - Duration h: 24

Endpoint: LC50 - Species: Fish = 10000 mg/l - Duration h: 96

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**Trade name: INRAL RADIATOR**

Endpoint: EC50 - Species: Algae > 10000 mg/l - Duration h: 72

## **Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

### **a) Aquatic acute toxicity:**

Endpoint: LC50 - Species: Fish > 100 mg/l

Endpoint: EC50 - Species: Daphnia > 100 mg/l

Endpoint: EC50 - Species: Algae > 100 mg/l

### **b) Aquatic chronic toxicity:**

Endpoint: NOEC - Species: Fish > 0.1 mg/l

Endpoint: NOEC - Species: Daphnia > 0.1 mg/l

### **c) Bacteria toxicity:**

Endpoint: EC50 > 100 mg/l

## **2-Pentanone oxime - CAS: 623-40-5**

### **a) Aquatic acute toxicity:**

Endpoint: NOEC - Species: Fish = 100 mg/l - Duration h: 96

Endpoint: EC50 - Species: Algae = 88 mg/l - Duration h: 72

Endpoint: NOEC - Species: Daphnia > 100 mg/l - Duration h: 48

## **1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2**

### **a) Aquatic acute toxicity:**

Endpoint: LC50 - Species: Fish > 100 mg/l

Endpoint: EC50 - Species: Algae > 1000 mg/l - Duration h: 168

Endpoint: EC50 - Species: Daphnia > 21100 mg/l - Duration h: 48 - Notes: 21100-25900 mg/l

Endpoint: EC50 - Species: Fish = 20800 mg/l - Duration h: 96

## **12.2 Persistence and degradability**

None

### **acetone; propan-2-one; propanone - CAS: 67-64-1**

Biodegradability: Readily biodegradable

### **Hydrocarbons, C3-4; Petroleum gas - CAS: 68476-40-4**

Biodegradability: Readily biodegradable

### **n-butyl acetate - CAS: 123-86-4**

Biodegradability: Readily biodegradable

### **2-butoxyethanol; ethylene glycol monobutyl ether - CAS: 111-76-2**

Biodegradability: Readily biodegradable

### **titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter <= 10 µm] - CAS: 13463-67-7**

Biodegradability: Not persistent and Biodegradable

### **2-methoxy-1-methylethyl acetate - CAS: 108-65-6**

Biodegradability: Readily biodegradable

### **2-Pentanone oxime - CAS: 623-40-5**

Biodegradability: Non-readily biodegradable

## **12.3 Bioaccumulative potential**

### **acetone; propan-2-one; propanone - CAS: 67-64-1**

Bioaccumulation: Not bioaccumulative - Test: BCF - Bioconcentration factor 3

Bioaccumulation: Not bioaccumulative - Test: Kow - Partition coefficient 0.24

### **Hydrocarbons, C3-4; Petroleum gas - CAS: 68476-40-4**

Bioaccumulation: Not bioaccumulative

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## **n-butyl acetate - CAS: 123-86-4**

Test: BCF - Bioconcentration factor 15.3

Test: Kow - Partition coefficient 2.3

## **2-butoxyethanol; ethylene glycol monobutyl ether - CAS: 111-76-2**

Test: Kow - Partition coefficient 0.81 - Notes: 1-OCTANOL/WATER

## **titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$ ] - CAS: 13463-67-7**

Bioaccumulation: Not bioaccumulative

## **2-methoxy-1-methylethyl acetate - CAS: 108-65-6**

Bioaccumulation: Not bioaccumulative

## **1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2**

Test: Kow - Partition coefficient -0.43

### **12.4 Mobility in soil**

N.A.

### **12.5 Results of PBT and vPvB assessment**

vPvB Substances: None - PBT Substances: None

### **12.6 Endocrine disrupting properties**

No endocrine disruptor substances present in concentration  $\geq 0.1\%$

### **12.7 Other adverse effects**

None

## **SECTION 13: Disposal considerations**

### **13.1 Waste treatment methods**

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

#### **Additional disposal information:**

WASTE CODE = 160504

## **SECTION 14: Transport information**

### **14.1 UN number or ID number**

ADR-UN number: 1950

IATA-Un number: 1950

IMDG-Un number: 1950

### **14.2 UN proper shipping name**

ADR-Shipping Name: AEROSOLS

IATA-Shipping Name: AEROSOLS, flammable

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**Trade name: INRAL RADIATOR**

IMDG-Shipping Name: AEROSOLS

## 14.3 Transport hazard class(es)

ADR-Class: 2 - 5F  
ADR-Label: 2.1  
IATA-Class: 2.1  
IATA-Label: 2.1  
IMDG-Class: 2.1

## 14.4 Packing group

ADR-Packing Group: -  
IATA-Packing group: -  
IMDG-Packing group: -

## 14.5 Environmental hazards

Marine pollutant: No  
IMDG-EMS: F-D S-U

## 14.6 Special precautions for user

ADR-Transport category (Tunnel restriction code): D  
ADR-Limited Quantity (LQ): 1 L  
IATA-Passenger Aircraft: Forbidden  
IATA-Cargo Aircraft: 203  
IMDG-Shipping Name: AEROSOLS

## 14.7 Maritime transport in bulk according to IMO instruments

N.A.

## SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)  
Dir. 2000/39/EC (Occupational exposure limit values)  
Regulation (EC) n. 1907/2006 (REACH)  
Regulation (EC) n. 1272/2008 (CLP)  
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013  
Regulation (EU) n. 2020/878  
Regulation (EU) n. 286/2011 (ATP 2 CLP)  
Regulation (EU) n. 618/2012 (ATP 3 CLP)  
Regulation (EU) n. 487/2013 (ATP 4 CLP)  
Regulation (EU) n. 944/2013 (ATP 5 CLP)  
Regulation (EU) n. 605/2014 (ATP 6 CLP)  
Regulation (EU) n. 2015/1221 (ATP 7 CLP)  
Regulation (EU) n. 2016/918 (ATP 8 CLP)  
Regulation (EU) n. 2016/1179 (ATP 9 CLP)  
Regulation (EU) n. 2017/776 (ATP 10 CLP)

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Regulation (EU) n. 2018/669 (ATP 11 CLP)  
Regulation (EU) n. 2018/1480 (ATP 13 CLP)  
Regulation (EU) n. 2019/521 (ATP 12 CLP)  
Regulation (EU) n. 2020/217 (ATP 14 CLP)  
Regulation (EU) n. 2020/1182 (ATP 15 CLP)  
Regulation (EU) n. 2021/643 (ATP 16 CLP)

**Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:**

**Restrictions related to the product:**

Restriction 3

Restriction 40

**Restrictions related to the substances contained:**

Restriction 70

Restriction 75

**Where applicable, refer to the following regulatory provisions :**

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

Dir. 2004/42/EC (VOC directive)

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors.

**Provisions related to directive EU 2012/18 (Seveso III):**

Seveso III category according to Annex 1, part 1

Product belongs to category: P3a

## 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

**Substances for which a Chemical Safety Assessment has been carried out:**

n-butyl acetate

2-butoxyethanol; ethylene glycol monobutyl ether

2-methoxy-1-methylethyl acetate

reaction mass of ethylbenzene and xylene

xylene (mixture of isomers)

1-methoxy-2-propanol; monopropylene glycol methyl ether

## 15.3 VOC

Volatile organic compounds - VOCs = 630 g/l

Volatile organic compounds - VOCs = 84 %

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

## SECTION 16: Other information

**Full text of phrases referred to in Section 3:**

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

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H226 Flammable liquid and vapour.  
H332 Harmful if inhaled.  
H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H351 Suspected of causing cancer if inhaled.  
H312 Harmful in contact with skin.  
H304 May be fatal if swallowed and enters airways.  
H335 May cause respiratory irritation.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H412 Harmful to aquatic life with long lasting effects.  
H373 May cause damage to organs (hearing organs) through prolonged or repeated exposure.

Hazard class and hazard category	Code	Description
Flam. Gas 1A	2.2/1A	Flammable gas, Category 1A
Aerosols 1	2.3/1	Aerosol, Category 1
Press Gas (Liq.)	2.5/L	Gases under pressure (Liquefied gas)
Flam. Liq. 2	2.6/2	Flammable liquid, Category 2
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 4	3.1/4/Dermal	Acute toxicity (dermal), Category 4
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Asp. Tox. 1	3.10/1	Aspiration hazard, Category 1
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Carc. 2	3.6/2	Carcinogenicity, Category 2
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
STOT RE 2	3.9/2	Specific target organ toxicity - repeated exposure, Category 2
Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

This safety data sheet has been completely updated in compliance to Regulation 2020/878.  
Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Aerosols 1, H222, H229	On basis of test data
Eye Irrit. 2, H319	Calculation method
STOT SE 3, H336	Calculation method

This document was prepared by a competent person who has received appropriate training.

#### Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities  
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

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The logo for INRAL, featuring the word "INRAL" in a bold, white, sans-serif font. To the right of the text is a stylized yellow and orange circular graphic element.

**Trade name: INRAL RADIATOR**

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CLP: Classification, Labeling, Packaging.

DNEL: Derived No Effect Level.

EINECS: European Inventory of Existing Commercial Chemical Substances.

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO: International Civil Aviation Organization.

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).

IMDG: International Maritime Code for Dangerous Goods.

INCI: International Nomenclature of Cosmetic Ingredients.

KSt: Explosion coefficient.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

PNEC: Predicted No Effect Concentration.

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

STEL: Short Term Exposure limit.

STOT: Specific Target Organ Toxicity.

TLV: Threshold Limiting Value.

TWA: Time-weighted average

WGK: German Water Hazard Class.