



SAFETY DATA SHEET

TEMAFLOOR 210 HARDENER

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

1.1 Product identifier

Product name : TEMAFLOR 210 HARDENER
Product description : Hardener.

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

Recommended use: Painting work
Only for industrial and professional use. The product is not intended for consumer use.

1.3 Details of the supplier of the safety data sheet

Manufacturer or Distributor

Tikkurila Oyj
P.O. Box 53
FI-01301 VANTAA
FINLAND
Telephone +358 20 191 2000

e-mail address of person responsible for this SDS : Tikkurila Oyj,
Product Safety,
e-mail: productsafety@tikkurila.com

1.4 Emergency telephone number

Telephone number : 112
(24h)

Supplier or Manufacturer

Telephone number : Tikkurila Oyj
+358 20 191 2000 (GMT +2) Mon-Fri 8-16

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

Acute Tox. 4, H302
Acute Tox. 4, H312
Skin Corr. 1B, H314
Skin Sens. 1, H317
Repr. 1B, H360F (Fertility)
Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements	: H302 + H312 - Harmful if swallowed or in contact with skin. H314 - Causes severe skin burns and eye damage. H317 - May cause an allergic skin reaction. H360F - May damage fertility. H411 - Toxic to aquatic life with long lasting effects.
Precautionary statements	
General	: Not applicable.
Prevention	: P261 - Avoid breathing vapor. P273 - Avoid release to the environment. P280 - Wear protective gloves/clothing and eye/face protection. P284 - In case of inadequate ventilation wear respiratory protection.
Response	: P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. 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 or physician. P308 + P313 - IF exposed or concerned: Get medical attention.
Storage	: Not applicable.
Disposal	: Not applicable.
Hazardous ingredients	: Isophorone diamine benzyl alcohol cycloaliphatic amine bisphenol A
Supplemental label elements	: Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Restricted to professional users.

2.3 Other hazards

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification Regulation (EC) No. 1272/2008 [CLP]	Notes
Isophorone diamine	REACH #: 01-2119514687-32 EC: 220-666-8 CAS: 2855-13-2 Index: 612-067-00-9	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412	-
benzyl alcohol	REACH #: 01-2119492630-38 EC: 202-859-9 CAS: 100-51-6	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Irrit. 2, H319	-
cycloaliphatic amine	EC: 500-101-4 CAS: 38294-64-3	≥25 - ≤46	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 2, H411	-
2,6-di-tert-butyl-p-cresol	REACH #: 01-2119555270-46 EC: 204-881-4 CAS: 128-37-0	≤5	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	-
bisphenol A	EC: 201-245-8 CAS: 80-05-7 Index: 604-030-00-0	≤3	Eye Dam. 1, H318 Skin Sens. 1, H317 Repr. 1B, H360F (Fertility)	-

			STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.
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There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Notes, if applicable, refer to Notes given in Annex VI of 1272/2008/EC.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Show this safety data sheet or label to the doctor if possible.
- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of lukewarm water, keeping eyelids open. Continue to rinse for at least 20 minutes. Get medical attention immediately. Continue rinsing until medical attention can be obtained.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners. In case of chemical burns, get medical attention as soon as possible.
- Ingestion** : If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Remove to fresh air and keep at rest in a position comfortable for breathing. Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

- ☑ Harmful if swallowed or in contact with skin.
- Causes severe skin burns and eye damage.
- May damage fertility.
- May cause an allergic skin reaction.
- See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire. Recommended: Alcohol resistant foam, CO₂, powders or water spray/mist.
- Unsuitable extinguishing media** : Do not use a direct water jet that could spread the fire.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : This product is not classified as flammable. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.
- Hazardous combustion products** : When exposed to high temperatures, hazardous decomposition products may be produced, such as carbon monoxide and dioxide, smoke, oxides of nitrogen etc.


5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Use water spray to keep fire-exposed containers cool. This material is hazardous to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures** : Provide adequate ventilation. Do not breathe vapor or mist. Do not get in eyes or on skin. Put on appropriate personal protective equipment (see Section 8).
- 6.2 Environmental precautions** : Hazardous to aquatic environment. Do not allow to enter drains, water courses or soil.
- 6.3 Methods and materials for containment and cleaning up** : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Preferably clean with a detergent. Avoid using solvents.
- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 13 for additional waste treatment information.


SECTION 7: Handling and storage

- 7.1 Precautions for safe handling** :  Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Avoid contact with skin and eyes. Avoid breathing vapor. Avoid inhalation of dust from sanding. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. See Section 8 for information on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled and stored. Wash hands before breaks and immediately after handling the product. Avoid release to the environment.
- 7.2 Conditions for safe storage, including any incompatibilities** : Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Recommended storage temperature is +5°C ...+25°C. Store in accordance with local regulations.
- 7.3 Specific end use(s)** : None.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
 isphenol A	EU OEL (Europe, 12/2017). Notes: list of indicative occupational exposure limit values TWA: 2 mg/m ³ 8 hours. Form: Inhalable fraction

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls

Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn (see Personal protection for both components). Provide a readily-accessible eyewash facility. Comply with the health and safety at work laws.

Individual protection measures

- Eye/face protection** : Wear eye/face protection (EN166).
- Hand protection** : Always wear approved protective gloves against chemicals. Gloves should be replaced regularly and if there is any sign of damage to the glove material. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.
Recommended glove material (EN374):
< 1 hour (breakthrough time): nitrile rubber, butyl rubber
> 8 hours (breakthrough time): laminated foil
Not recommended: PVC or natural rubber (latex) gloves
- Skin protection** : Wear suitable protective clothing.
- Respiratory protection** : If ventilation is inadequate, use respirator that will protect against dust/mist. Wear a half mask or full face respirator with gas and vapor filter A and dust filter P2 during sanding (EN140:1998, EN405:2001). During continuous and long-term work the use of motor-driven or air-fed respirators is recommended (EN12941:1998). Be sure to use an approved/certified respirator or equivalent. Check that mask fits tightly and change filter regularly.
- Environmental exposure controls** : For information regarding environmental protection measures, please refer to section 13 for waste handling, section 7 for handling and storage and section 1.2 for relevant identified uses of the substance or mixture and uses advised against.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Clear.
- Odor** : Strong.
- Odor threshold** : Not relevant for the hazard assessment of the product.
- pH** : Not relevant for the hazard assessment of the product.
- Melting point/freezing point** : -15.4°C (benzyl alcohol)
- Initial boiling point and boiling range** : 205.3°C (benzyl alcohol)
- Flash point** : >100 °C
- Evaporation rate** : 0.007 (butyl acetate = 1) (benzyl alcohol)
- Flammability (solid, gas)** : Not applicable. Product is a liquid.
- Upper/lower flammability or explosive limits** : Lower: 1.3% (benzyl alcohol)
Upper: 13% (benzyl alcohol)
- Vapor pressure** : 0.023 kPa [room temperature] (benzyl alcohol)
- Vapor density** : 3.7 (benzyl alcohol)
- Density** : 1.01 g/cm³
- Solubility(ies)** : Not available.
- Partition coefficient: n-octanol/ water** : Not available.
- Auto-ignition temperature** : 436°C (benzyl alcohol)
- Decomposition temperature** : Not relevant for the hazard assessment of the product.
- Viscosity** : Not relevant for the hazard assessment of the product.
- Explosive properties** : No explosive ingredients present.
- Oxidizing properties** : No oxidizing ingredients present.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : See Section 10.5.
- 10.2 Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Avoid extreme heat and freezing.
- 10.5 Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions:
oxidizing agents
strong acids
strong alkalis
- 10.6 Hazardous decomposition products** : When exposed to high temperatures, hazardous decomposition products may be produced, such as carbon monoxide and dioxide, smoke, oxides of nitrogen etc.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

There is no testdata available on the product itself.

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Long term exposure causes irritation of respiratory system and mucous membranes of nose and throat. Prolonged contact can cause severe irritation or even burns. The liquid splashed in the eyes may cause irreversible damage.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Isophorone diamine	LD50 Oral	Rat	1030 mg/kg	-
benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	4.178 mg/l	4 hours
	LD50 Oral	Rat	1230 mg/kg	-
cycloaliphatic amine	LD50 Oral	Rat	1030 mg/kg	-

Harmful if swallowed or in contact with skin.

Irritation/Corrosion

Causes severe skin burns and eye damage.

Sensitization

May cause an allergic skin reaction.

Mutagenicity

Not classified.

Carcinogenicity

Not classified.

Reproductive toxicity

May damage fertility.

Teratogenicity

Not classified.

Specific target organ toxicity (single exposure)

Not classified.

Specific target organ toxicity (repeated exposure)

Not classified.

Aspiration hazard

Not classified.

SECTION 12: Ecological information

Ecological testing has not been conducted on this product.
Do not allow to enter drains, water courses or soil.

The product is classified as environmentally hazardous according to Regulation (EC) 1272/2008.
Toxic to aquatic life with long lasting effects.

12.1 Toxicity : No specific data.
Not available.

12.2 Persistence and degradability : No specific data.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	Bioconcentration factor [BCF]	Potential
Bisphenol A	3.4	20 to 67	low
2,6-di-tert-butyl-p-cresol	5.1	330 to 1800	high
benzyl alcohol	0.87	1.37	low
isophorone diamine	0.99	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : Not available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Methods of disposal : Gather residues into waste containers. Liquid residue and cleaning liquids are hazardous waste and must not be emptied into drains or sewage system, but handled in accordance with national regulations. Product residues should be left at special companies which have permission for gathering this kind of wastes.

European waste catalogue (EWC)

Waste code	Waste designation
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

Packaging

Methods of disposal : Empty packaging should be disposed of in accordance with national regulations.

Special precautions : **Note!** The ready for use mixture of paint and hardener generates much heat. Allow the remainder of the mixture to harden in a safe place, e.g. in the open.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	UN2735	UN2735	UN2735
14.2 UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (isophorone diamine, cycloaliphatic amine)	AMINES, LIQUID, CORROSIVE, N.O.S. (Isophoronediamine, cycloaliphatic amine)	AMINES, LIQUID, CORROSIVE, N.O.S. (Isophoronediamine, cycloaliphatic amine)
14.3 Transport hazard class(es)	8	8	8
14.4 Packing group	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

- ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Hazard identification number 80
Limited quantity 5 L
Special provisions 274
Tunnel code (E)
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-A, S-B
Special provisions 223, 274
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 5 L.. Packaging instructions: 852. Cargo Aircraft Only: 60 L.. Packaging instructions: 856. Limited Quantities - Passenger Aircraft: 1 L.. Packaging instructions: Y841.
Special provisions A3, A803

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.


SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
Disphenol A	Toxic to reproduction	Candidate	-	-

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles :  Restricted to professional users.

Other EU regulations

Europe inventory : All components are listed or exempted.


Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Bisphenol A	-	-	-	Repr. 1B, H360F (Fertility)

VOC Directive : This product is in scope of Directive 2004/42/CE.

15.2 Chemical Safety Assessment

: This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

 Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 vPvB = Very Persistent and Very Bioaccumulative


Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification


Justification

 Acute Tox. 4, H302	Calculation method
Acute Tox. 4, H312	Calculation method
Skin Corr. 1B, H314	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 1B, H360F (Fertility)	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements

:  H302 Harmful if swallowed.
 H312 Harmful in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.
 H360F May damage fertility.
 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.
 H412 Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

:  Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4
 Acute Tox. 4, H312 ACUTE TOXICITY (dermal) - Category 4
 Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
 Aquatic Acute 1, H400 AQUATIC HAZARD (ACUTE) - Category 1
 Aquatic Chronic 1, H410 AQUATIC HAZARD (LONG-TERM) - Category 1
 Aquatic Chronic 2, H411 AQUATIC HAZARD (LONG-TERM) - Category 2
 Aquatic Chronic 3, H412 AQUATIC HAZARD (LONG-TERM) - Category 3
 Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
 Repr. 1B, H360F TOXIC TO REPRODUCTION (Fertility) - Category 1B
 Skin Corr. 1B, H314 SKIN CORROSION/IRRITATION - Category 1B

Skin Sens. 1, H317
STOT SE 3, H335SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE
EXPOSURE) (Respiratory tract irritation) - Category 3**Date of issue/ Date of** : 11/7/2018**revision****Date of previous issue** : 4/21/2017**Version** : 3**Notice to reader**

This Safety Data Sheet is prepared in accordance with Annex II (EU) No 830/2015 to Regulation (EC) No 1907/2006 (REACH). The information contained in this Safety Data Sheet is based on the present state of knowledge and current EU and national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.