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

1.1 Product identifier

: NOROX®FC-100 Trade name

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

Use of the Sub-: Hardener

stance/Mixture

1.3 Details of the supplier of the safety data sheet

: United Initiators GmbH Company

Dr.-Gustav-Adolph-Str. 3

82049 Pullach

Telephone : +49 / 89 / 74422 - 0

E-mail address of person

responsible for the SDS

: contact@united-in.com

1.4 Emergency telephone number

0800 0 621 2139 (toll-free, access from Turkey only)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification T.R. SEA No 28848 and subsequent amendments

Organic peroxides, Type D H242: Heating may cause a fire.

Eye irritation, Category 2 H319: Causes serious eye irritation.

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

Reproductive toxicity, Category 2 H361: Suspected of damaging fertility or the un-

born child.

Specific target organ toxicity - single ex-

posure, Category 3, Respiratory system

H335: May cause respiratory irritation.

2.2 Label elements

Labelling T.R. SEA No 28848 and subsequent amendments

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Hazard pictograms :







Signal word : Danger

Hazard statements : H242 Heating may cause a fire.

H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

H361 Suspected of damaging fertility or the unborn child.

Precautionary statements : Prevention:

P201 Obtain special instructions before use.

P210 Keep away from heat, hot surfaces, sparks, open

flames and other ignition sources. No smoking.

P234 Keep only in original packaging. P261 Avoid breathing mist or vapours.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

Response:

P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Hazardous components which must be listed on the label:

2,4-Pentanedione, peroxide (CAS-No. 37187-22-7)

Diacetone alcohol (CAS-No. 123-42-2) tert-Butyl perbenzoate (CAS-No. 614-45-9)

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Organic Peroxide Liquid mixture

Components

Chemical name	CAS-No.	SEA Classification	Concentration
	EC-No.		(% w/w)

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	Index-No. KKDIK Registration No.		
2,4-Pentanedione, peroxide	37187-22-7 237-438-9	Org. Perox. D; H242 Eye Irrit. 2; H319 Skin Sens. 1; H317	>= 25 - < 30
Diacetone alcohol	123-42-2 204-626-7 603-016-00-1	Eye Irrit. 2; H319 Repr. 2; H361 STOT SE 3; H335 (Respiratory system) specific concentration limit	>= 25 - < 30
		Eye Irrit. 2; H319 >= 10 %	
tert-Butyl perbenzoate	614-45-9 210-382-2	Org. Perox. C; H242 Acute Tox. 4; H332 Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 3; H412 M-Factor (Acute aquatic toxicity): 1	>= 7,5 - < 10
Acetylacetone	123-54-6 204-634-0 606-029-00-0	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 3; H311	>= 1 - < 5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Take off contaminated clothing and shoes immediately.

Call a physician immediately.

Never give anything by mouth to an unconscious person.

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If unconscious, place in recovery position and seek medical

advice.

Move out of dangerous area.

Show this safety data sheet to the doctor in attendance.

Do not leave the victim unattended.

Symptoms of poisoning may appear several hours later.

Protection of first-aiders : First Aid responders should pay attention to self-protection

and use the recommended protective clothing

If inhaled : Administer oxygen if breathing is difficult or cyanosis is ob-

served.

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Call a physician or poison control centre immediately. If unconscious, place in recovery position and seek medical

advice.

Keep respiratory tract clear.

In case of skin contact : If symptoms persist, call a physician.

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing

and shoes.

Wash contaminated clothing before re-use.

If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty

of water and seek medical advice.

Remove contact lenses. Protect unharmed eye.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

If swallowed : Call a physician immediately.

Rinse mouth thoroughly with water.

Keep respiratory tract clear.

If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms :

sensitising effects

Risks : May cause an allergic skin reaction.

Causes serious eye irritation. May cause respiratory irritation.

Suspected of damaging fertility or the unborn child.

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4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray jet

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

Risk of explosion if heated under confinement.

Possible emission of gaseous decomposition products may

lead to a dangerous pressure build-up.

Avoid confinement.

Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which

may auto-ignite.

The product burns violently.

Flash back possible over considerable distance.

Do not allow run-off from fire fighting to enter drains or water

courses.

Vapours may form explosive mixtures with air.

The product will float on water and can be reignited on surface

water.

Cool closed containers exposed to fire with water spray.

5.3 Advice for firefighters

Special protective equipment :

for firefighters

Wear self-contained breathing apparatus for firefighting if nec-

essary. Use personal protective equipment.

Specific extinguishing meth-

ods

Do not use a solid water stream as it may scatter and spread

fire.

Remove undamaged containers from fire area if it is safe to do

SO.

Use water spray to cool unopened containers.

Further information : Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use a water spray to cool fully closed containers.

Collect contaminated fire extinguishing water separately. This

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must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must

be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Follow safe handling advice and personal protective equip-

ment recommendations.

Beware of vapours accumulating to form explosive concentra-

tions. Vapours can accumulate in low areas.

Use personal protective equipment. Remove all sources of ignition.

Never return spills in original containers for re-use.

Treat recovered material as described in the section "Disposal

considerations".

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform

respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contact with incompatible substances can cause decomposi-

tion at or below SADT. Clear spills immediately.

Suppress (knock down) gases/vapours/mists with a water

spray jet.

To clean the floor and all objects contaminated by this materi-

al, use plenty of water.

Soak up with inert absorbent material. Isolate waste and do not reuse. Non-sparking tools should be used.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-

mine which regulations are applicable.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

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CONTROLS/PERSONAL PROTECTION section.

Advice on safe handling : Open drum carefully as content may be under pressure.

Protect from contamination.

Do not swallow.

Do not breathe vapours/dust.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes.

Avoid formation of aerosol.

Take precautionary measures against static discharges. Never return any product to the container from which it was

originally removed.

Provide sufficient air exchange and/or exhaust in work rooms.

Avoid confinement.

Keep away from heat, hot surfaces, sparks, open flames and

other ignition sources. No smoking.

Smoking, eating and drinking should be prohibited in the ap-

plication area.

Wash thoroughly after handling.

For personal protection see section 8.

Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being

used.

Advice on protection against

fire and explosion

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Keep away from combustible material. Do not spray on a naked flame or any incandescent material.

Hygiene measures

Avoid contact with skin, eyes and clothing. Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately

after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store in cool place. Contamination may result in dangerous pressure increases - closed containers may rupture. Observe label precautions. Store in accordance with the particular national regulations. Avoid impurities (e.g. rust, dust, ash), risk of decomposition. Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully recorded and least upright to propert leakage.

fully resealed and kept upright to prevent leakage.

Advice on common storage : Keep away from combustible materials.

Keep away from strong acids, bases, heavy metal salts and

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other reducing substances.

Recommended storage tem- :

perature

0 - 25 °C

age stability

Further information on stor- : Stable under recommended storage conditions.

7.3 Specific end use(s)

Specific use(s) For further information, refer to the product technical data

sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
3,5-dimethyl-1,2- dioxolane-3,5-diol	Workers	Inhalation	Long-term systemic effects	11,75 mg/m3
	Workers	Skin contact	Long-term systemic effects	13,33 mg/kg bw/day
tert-Butyl perbenzoate	Workers	Inhalation	Long-term systemic effects	24,7 mg/m3
	Workers	Skin contact	Long-term systemic effects	17,5 mg/kg bw/day
Diacetone alcohol	Workers	Inhalation	Acute local effects	240 mg/m3
	Workers	Skin contact	Long-term systemic effects	9,4 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	66,4 mg/m3
	Workers	Inhalation	Long-term local ef- fects	66,4 mg/m3
Acetylacetone	Workers	Inhalation		84 mg/m3
	Workers	Skin contact		12 mg/kg bw/day

Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
3,5-dimethyl-1,2-dioxolane-3,5-diol	Fresh water	0,054 mg/l
	Marine water	0,0054 mg/l
	Intermittent use/release	0,054 mg/l
	Fresh water sediment	0,48 mg/kg
	Marine sediment	0,048 mg/kg
	Sewage treatment plant	6,2 mg/l

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	Soil	0,065 mg/kg
tert-Butyl perbenzoate	Fresh water	0,01 mg/l
	Marine water	0,00101 mg/l
	Intermittent use/release	0,008 mg/l
	Sewage treatment plant	0,6 mg/l
	Fresh water sediment	0,28 mg/kg
	Marine sediment	0,028 mg/kg
	Soil	0,049 mg/kg
Diacetone alcohol	Fresh water	2 mg/l
	Marine water	0,2 mg/l
	Sewage treatment plant	82 mg/l
	Fresh water sediment	9,06 mg/kg dry
		weight (d.w.)
	Marine sediment	0,91 mg/kg dry
		weight (d.w.)
	Soil	0,63 mg/kg dry
		weight (d.w.)
Acetylacetone	Fresh water	0,026 mg/l
	Marine water	0,0026 mg/l
	Sewage treatment plant	1,32 mg/l
	Fresh water sediment	0,155 mg/kg wet
		weight
	Marine sediment	0,0155 mg/kg
		wet weight
	Soil	0,01582 mg/kg
		wet weight

8.2 Exposure controls

Engineering measures

Minimize workplace exposure concentrations.

Personal protective equipment

Eye/face protection : Ensure that eyewash stations and safety showers are close to

the workstation location.

Please follow all applicable local/national requirements when selecting protective measures for a specific workplace. Always wear eye protection when the potential for inadvertent

eye contact with the product cannot be excluded.

Tightly fitting safety goggles

Please wear suitable protective goggles. Also wear face pro-

tection if there is a splash hazard.

Hand protection

Material : Nitrile rubber
Break through time : 120 min
Glove thickness : 0,40 mm

Material : butyl-rubber Break through time : 480 min Glove thickness : 0,47 mm

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Remarks : The data about break through time/strength of material are

standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of

workday.

Skin and body protection : Select appropriate protective clothing based on chemical re-

sistance data and an assessment of the local exposure poten-

tial.

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable

suits) to avoid exposed skin surfaces.

Wear as appropriate:

Flame retardant antistatic protective clothing.

Respiratory protection : In the case of dust or aerosol formation use respirator with an

approved filter.

Filter type : ABEK-filter

Protective measures : The type of protective equipment must be selected according

to the concentration and amount of the dangerous substance

at the specific workplace.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : Colorless to pale yellow

Odour : mild

Odour Threshold : not determined

pH : No data available

Melting point/range : No data available

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Boiling point/boiling range : No data available

Flash point : 65 °C

Method: closed cup

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Remarks: Organic peroxide

Upper explosion limit / Upper

flammability limit

Upper explosion limit No data available

.

Lower explosion limit / Lower

flammability limit

Lower explosion limit

No data available

Vapour pressure : not determined

Relative vapour density : not determined

Relative density : not determined

Density : ca. 1,1 g/cm3

Solubility(ies)

Water solubility : slightly soluble

Partition coefficient: n-

octanol/water

Not applicable

Auto-ignition temperature : not determined

Viscosity

Viscosity, dynamic : not determined

Viscosity, kinematic : No data available

Explosive properties : Not explosive

In use, may form flammable/explosive vapour-air mixture.

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Organic peroxide

9.2 Other information

Self-Accelerating decomposi-

tion temperature (SADT)

60 °C

SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a

self-accelerating decomposition reaction.

Self-heating substances : The substance or mixture is not classified as self heating.

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Self-ignition : The substance or mixture is not classified as pyrophoric.

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

Heating may cause a fire or explosion.

10.2 Chemical stability

Stable under recommended storage conditions.

No decomposition if stored normally.

10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Protect from contamination.

Contact with incompatible substances can cause decomposi-

tion at or below SADT. Heat, flames and sparks. Avoid confinement.

10.5 Incompatible materials

Materials to avoid : Accelerators, strong acids and bases, heavy metals and

heavy metal salts, reducing agents

10.6 Hazardous decomposition products

Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified due to lack of data.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg

Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l

Exposure time: 4 h

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Test atmosphere: vapour Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2.000 mg/kg

Method: Calculation method

Components:

2,4-Pentanedione, peroxide:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male): > 13,1 mg/l

Exposure time: 1 h

Test atmosphere: dust/mist Method: Expert judgement

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

Method: Expert judgement

Assessment: The substance or mixture has no acute dermal

toxicity

Diacetone alcohol:

Acute oral toxicity : LD50 (Rat): 3.002 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC0 (Rat, male and female): >= 7,6 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Method: OECD Test Guideline 403

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD0 (Rat): > 1.875 mg/kg

Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal

oxicity

Remarks: No mortality observed at this dose.

tert-Butyl perbenzoate:

Acute oral toxicity : LD0 (Rat): > 2.000 mg/kg

Method: OECD Test Guideline 423

Assessment: The substance or mixture has no acute oral tox-

icity

Acute inhalation toxicity : LC50 (Rat): 1,01 mg/l

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Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 436

Acute dermal toxicity : LD0 (Rat): > 2.000 mg/kg

Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal

toxicity

Acetylacetone:

Acute oral toxicity : LD50 (Rat): 570 mg/kg

Acute inhalation toxicity : LC50 (Rat): 5,1 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit, female): 790 mg/kg

Skin corrosion/irritation

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

Product:

Remarks : May cause skin irritation and/or dermatitis.

Components:

2,4-Pentanedione, peroxide:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Diacetone alcohol:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

tert-Butyl perbenzoate:

Species : Rabbit

Method : OECD Test Guideline 404

Result : Skin irritation

Acetylacetone:

Species : Rabbit

Result : No skin irritation

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Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks : May cause irreversible eye damage.

Components:

2,4-Pentanedione, peroxide:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Eye irritation

Diacetone alcohol:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Irritation to eyes, reversing within 21 days

tert-Butyl perbenzoate:

Species : Rabbit

Method : OECD Test Guideline 405

Result : No eye irritation

Acetylacetone:

Species : Rabbit

Result : No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Product:

Remarks : Causes sensitisation.

Components:

2,4-Pentanedione, peroxide:

Test Type : Maximisation Test Exposure routes : Skin contact Species : Guinea pig

Method : OECD Test Guideline 406

Result : Probability or evidence of skin sensitisation in humans

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Remarks : Causes sensitisation.

Diacetone alcohol:

Species : Guinea pig

Method : OECD Test Guideline 406

Result : Does not cause skin sensitisation.

tert-Butyl perbenzoate:

Species : Mouse

Method : OECD Test Guideline 429

Result : May cause sensitisation by skin contact.

Acetylacetone:

Exposure routes : Skin contact Species : Mouse

Method : OECD Test Guideline 429

Result : Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

2,4-Pentanedione, peroxide:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: positive

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test

Species: Mouse (male and female)
Application Route: Intraperitoneal injection

Method: OECD Test Guideline 474

Result: negative

Diacetone alcohol:

Genotoxicity in vitro : Method: OECD Test Guideline 476

Result: negative

Method: OECD Test Guideline 471

Result: negative

Method: OECD Test Guideline 473

Result: negative

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Genotoxicity in vivo : Remarks: Not classified due to data which are conclusive

although insufficient for classification.

Germ cell mutagenicity- As-

sessment

Tests on bacterial or mammalian cell cultures did not show

mutagenic effects.

tert-Butyl perbenzoate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: positive

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: positive

Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: positive

Test Type: Mouse Lymphoma

Result: positive

Genotoxicity in vivo : Test Type: Micronucleus test

Species: Mouse (male and female)

Application Route: Oral

Result: negative

Acetylacetone:

Genotoxicity in vitro : Method: OECD Test Guideline 471

Result: negative

Method: OECD Test Guideline 479

Result: positive

Method: OECD Test Guideline 473

Result: positive

Method: OECD Test Guideline 476

Result: negative

Genotoxicity in vivo : Method: OECD Test Guideline 474

Result: positive

Method: OECD Test Guideline 483

Result: negative

Method: OECD Test Guideline 475

Result: negative

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Method: OECD Test Guideline 478

Result: Equivocal

Test Type: DNA Repair

Species: Rat

Application Route: Oral

Result: negative

Species: Rat

Application Route: inhalation (vapour)

Method: OPPTS 870.5395

Result: negative

Carcinogenicity

Not classified due to lack of data.

Components:

2,4-Pentanedione, peroxide:

Remarks : This information is not available.

Diacetone alcohol:

Carcinogenicity - Assess-

ment

Weight of evidence does not support classification as a car-

cinogen

tert-Butyl perbenzoate:

Remarks : This information is not available.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

2,4-Pentanedione, peroxide:

Effects on fertility : Remarks: No data available

Effects on foetal develop-

ment

: Remarks: No data available

Diacetone alcohol:

Effects on fertility : Species: Rat

Application Route: oral (gavage)

General Toxicity - Parent: NOAEL: 300 mg/kg body weight General Toxicity F1: NOAEL: 300 mg/kg body weight

Method: OECD Test Guideline 422

Effects on foetal develop: Species: Rat

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ment Application Route: inhalation (vapour)

General Toxicity Maternal: NOAEL: 4,106 Embryo-foetal toxicity: NOAEL: 12.292 Method: OECD Test Guideline 414

Reproductive toxicity - As-

sessment

Some evidence of adverse effects on sexual function and

fertility, and/or on development, based on animal experiments.

tert-Butyl perbenzoate:

Effects on fertility : Species: Rat

Application Route: Oral

General Toxicity - Parent: NOAEL: 300 mg/kg body weight

Method: OECD Test Guideline 421

Effects on foetal develop-

ment

Species: Rat

Application Route: Oral

General Toxicity Maternal: NOAEL: 300 mg/kg body weight

Method: OECD Test Guideline 414

Acetylacetone:

Effects on foetal develop-

ment

Species: Rat

Application Route: inhalation (vapour)
Duration of Single Treatment: 13 d
General Toxicity Maternal: NOAEC: 200
Teratogenicity: NOAEC Parent: 400
Embryo-foetal toxicity: NOAEC F1: 50
Method: OECD Test Guideline 414

Species: Rat

Application Route: inhalation (vapour)
Duration of Single Treatment: 13 d
General Toxicity Maternal: LOAEC: 400
Embryo-foetal toxicity: LOAEC F1: 200
Method: OECD Test Guideline 414

STOT - single exposure

May cause respiratory irritation.

Components:

Diacetone alcohol:

Target Organs : Respiratory system

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified due to lack of data.

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Repeated dose toxicity

Components:

Diacetone alcohol:

Species : Rat

NOAEL : 1,04 mg/l

LOAEL : 4,685 mg/l

Application Route : inhalation (vapour)

Exposure time : 6 w

Method : OECD Test Guideline 412

Species : Rat NOAEL : 100 mg/kg Application Route : oral (gavage)

Method : OECD Test Guideline 422

Acetylacetone:

Species : Rat

NOAEL : 200 mg/kg

LOAEL : 805 mg/kg

Application Route : inhalation (vapour)

Exposure time : 9 d

Species : Rat
NOAEL : 100 mg/kg
Application Route : inhalation (vapour)

Exposure time : 90 d

Method : OECD Test Guideline 413

Species : Rabbit
NOAEL : 244 mg/kg
LOAEL : 975 mg/kg
Application Route : Dermal
Exposure time : 9 d

Aspiration toxicity

Not classified due to lack of data.

Components:

Acetylacetone:

No aspiration toxicity classification

Further information

Product:

Remarks : No data available

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Components:

Acetylacetone:

Remarks : Solvents may degrease the skin.

SECTION 12: Ecological information

12.1 Toxicity

Components:

2,4-Pentanedione, peroxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 67,6 mg/l

Exposure time: 96 h
Test Type: semi-static test

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 7,05 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): 5,36

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 : 614 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Diacetone alcohol:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 100 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 1.000 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EbC50 (Pseudokirchneriella subcapitata (green algae)): >

1.000 ma/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 1.000

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

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tert-Butyl perbenzoate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1,6 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 11 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): 0,8

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,72

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

M-Factor (Acute aquatic tox- :

icity)

: 1

Toxicity to microorganisms : EC50 : 43 mg/l

Exposure time: 0,5 h

Method: OECD Test Guideline 209

Toxicity to daphnia and other

aquatic invertebrates (Chron-

ic toxicity)

EC10: 0,49 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Acetylacetone:

Toxicity to fish : LC50 (Fish): 104 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 25,9 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): 83,22

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 3,2

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 : 107,6 mg/l

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Exposure time: 3 h

Method: OECD Test Guideline 209

EC10: 13,2 mg/l Exposure time: 3 h

Method: OECD Test Guideline 209

Toxicity to fish (Chronic tox-

icity)

NOEC: 10 mg/l Exposure time: 34 d

Species: Pimephales promelas (fathead minnow)

Method: OECD Test Guideline 210

LOEC: 22 mg/l Exposure time: 34 d

Species: Pimephales promelas (fathead minnow)

Method: OECD Test Guideline 210

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC: 18 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components:

2,4-Pentanedione, peroxide:

Biodegradability : Result: Readily biodegradable.

Method: OECD Test Guideline 301D

Diacetone alcohol:

Biodegradability : Result: Readily biodegradable.

Method: OECD Test Guideline 301

tert-Butyl perbenzoate:

Biodegradability : Result: Readily biodegradable.

Method: OECD Test Guideline 301D

Acetylacetone:

Biodegradability : Result: Readily biodegradable.

Method: OECD Test Guideline 301C

12.3 Bioaccumulative potential

Components:

2,4-Pentanedione, peroxide:

Partition coefficient: n- : log Pow: 1,1 (25 °C)

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octanol/water Method: OECD Test Guideline 117

Diacetone alcohol:

Partition coefficient: n-

octanol/water

: log Pow: -0,09 (20 °C)

tert-Butyl perbenzoate:

Partition coefficient: n-

octanol/water

log Pow: 2,89 (25 °C)

Acetylacetone:

Bioaccumulation : Bioconcentration factor (BCF): 3,16

Remarks: Calculation

Partition coefficient: n-

octanol/water

log Pow: 0,68 (40 °C)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered

to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of

0.1% or higher.

12.6 Other adverse effects

Product:

Additional ecological infor-

mation

An environmental hazard cannot be excluded in the event of

unprofessional handling or disposal.

Toxic to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of wastes in an approved waste disposal facility.

The product should not be allowed to enter drains, water

courses or the soil.

Do not contaminate ponds, waterways or ditches with chemi-

cal or used container.

Contaminated packaging : Dispose of in accordance with local regulations.

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Clean container with water.

Dispose of contents/ container to an approved waste disposal

plant.

Empty remaining contents.

Dispose of as unused product.

Do not re-use empty containers.

Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

14.1 UN number

ADR : UN 3105 **IMDG** : UN 3105

14.2 UN proper shipping name

ADR : ORGANIC PEROXIDE TYPE D, LIQUID

(ACETYL ACETONE PEROXIDE, tert-BUTYL

PEROXYBENZOATE)

IMDG : ORGANIC PEROXIDE TYPE D, LIQUID

(ACETYL ACETONE PEROXIDE, tert-BUTYL

PEROXYBENZOATE)

14.3 Transport hazard class(es)

Class Subsidiary risks

ADR : 5.2 **IMDG** : 5.2

14.4 Packing group

ADR

Packing group : Not assigned by regulation

Classification Code : P1 Labels : 5.2 Tunnel restriction code : (D)

IMDG

Packing group : Not assigned by regulation

Labels : 5.2 EmS Code : F-J, S-R

14.5 Environmental hazards

ADR

Environmentally hazardous : no

IMDG

Marine pollutant : no

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14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

P₆b

KKDIK (30105 (Bis)) - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex 17)

Conditions of restriction for the following entries should be considered:

Number on list 3

Regulation on Persistent Organic Pollutants (Number 30595 and subsequent amendments published)

: Not applicable

Regulation on prevention of major industrial accidents. Reg number 30702

SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC

PEROXIDES

Other regulations:

Gefahrgruppe nach TRGS 741: II (German regulatory requirements)

T.R. Regulation on Classification, Labeling and Packaging of Substances and Mixtures, dated December 11, 2013 and numbered 28848 from the Ministry of Environment and Urbanization and the subsequent amendments published.

The components of this product are reported in the following inventories:

TCSI (TW) : On the inventory, or in compliance with the inventory

TSCA (US) : All substances listed as active on the TSCA inventory

AIIC (AU) : On the inventory, or in compliance with the inventory

DSL (CA) : All components of this product are on the Canadian DSL

ENCS (JP) : On the inventory, or in compliance with the inventory

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ISHL (JP) On the inventory, or in compliance with the inventory

KECI (KR) On the inventory, or in compliance with the inventory

PICCS (PH) On the inventory, or in compliance with the inventory

IECSC (CN) On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Further information

Other information This safety datasheet only contains information relating to

safety and does not replace any product information or prod-

uct specification.

These safety instructions also apply to empty packaging which

may still contain product residues.

The hazards on the label also apply to residues in the con-

tainer.

compile the Safety Data

Sheet

Sources of key data used to : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

Classification of the mixture: Classification procedure:

Org. Perox. D	H242	Based on product data or assessment
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method
Repr. 2	H361	Calculation method
STOT SE 3	H335	Calculation method

Full text of H-Statements

H226 : Flammable liquid and vapour. H242 : Heating may cause a fire. : Harmful if swallowed. H302

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H412

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H311		:	Toxic in contact	ct with skin.	
H315		:	Causes skin in	ritation.	
H317		:	May cause an	allergic skin reaction.	
H319		:	Causes seriou	s eye irritation.	
H331		:	Toxic if inhaled	d.	
H332		:	Harmful if inha	led.	
H335		:	May cause res	piratory irritation.	
H361		:	Suspected of o	damaging fertility or the unborn child.	
H400		:	Very toxic to a		

Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard

Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Org. Perox. : Organic peroxides
Repr. : Reproductive toxicity

Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation

STOT SE : Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways: ADR - Agreement concerning the International Carriage of Dangerous Goods by Road: AllC - Australian Inventory of Industrial Chemicals: ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA -European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention: PBT - Persistent, Bioaccumulative and Toxic substance: PICCS - Philippines Inventory of Chemicals and Chemical Substances: (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI -

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Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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