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

1.1 Product identifier

2092

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

1.2.1 Relevant uses

Silicon

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Ramsauer GmbH & Co KG
Alte Bundesstraße 147
5350 Strobl / Wolfgangsee / AUSTRIA
Phone +43 (0)6135 8205 0
Fax +43 (0)6135 8205-250
Homepage www.ramsauer.eu
E-mail office@ramsauer.eu

Address enquiries to

Technical information office@ramsauer.eu

Safety Data Sheet sdb@chemiebuero.de (No dispatch of safety data sheets)

Safety data sheets are available from the supplier.

1.4 Emergency telephone number

Advisory body +43 (0) 1 406 43 43 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture [REGULATION (EC) No 1272/2008]

No classification.

2.2 Label elements

The product is required to be labelled in accordance with regulation CLP.

Hazard pictograms none

Signal word none

Hazard statements none

Precautionary statements none

Special labelling EUH210 Safety data sheet available on request.

Contains: N-[3-(Trimethoxysilyl)propyl]ethylenediamine. EUH208 May produce an allergic reaction.

2.3 Other hazards

Human health dangers Contact with moisture liberates methanol and pentan-2-one oxime.

Environmental 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.
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other hazards Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
1 - <5	O,O',O''-(methylsilylidyne)trioxime 2-pentanone
	CAS: 37859-55-5, EINECS/ELINCS: 484-460-1, Reg-No.: 01-2120004323-76-XXXX
	GHS/CLP: Acute Tox. 4: H302 - Eye Irrit. 2: H319
1 - <3	2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime
	CAS: 58190-62-8, EINECS/ELINCS: 700-810-0, Reg-No.: 01-2120006148-66-XXXX
	GHS/CLP: Acute Tox. 4: H302 - Eye Irrit. 2: H319
0,1 - <1	N-[3-(Trimethoxysilyl)propyl]ethylenediamine
	CAS: 1760-24-3, EINECS/ELINCS: 217-164-6
	GHS/CLP: Skin Sens. 1B: H317 - Eye Dam. 1: H318 - STOT SE 3: H335

Comment on component parts For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off contaminated clothing and wash before reuse.

Inhalation Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

Skin contact In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion Seek medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects
Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Carbon dioxide.
Water spray jet.
Dry powder.
Foam.

Extinguishing media that must not be used Full water jet.

5.2 Special hazards arising from the substance or mixture

In the event of fire the following can be released:
Carbon monoxide (CO)
Nitrogen oxides (NOx).

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
High risk of slipping due to leakage/spillage of product.
Use personal protective equipment (protective gloves, safety glasses, protective clothing).

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up mechanically.
Take up residues with absorbent material (e.g. sand, sawdust, general purpose binder, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.

Wash hands before breaks and after work.
Use barrier skin cream.
Do not eat, drink, smoke or take drugs at work.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Do not store together with food and animal food/diet.

Keep container tightly closed.
Keep in a cool place. Store in a dry place.
Protect from heat/overheating.
Protect from atmospheric moisture and water.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored EU (2004/37/EG)

Substance / EC LIMIT VALUES
Methanol
CAS: 67-56-1, EINECS/ELINCS: 200-659-6, EU-INDEX: 603-001-00-X, Reg-No.: 01-2119433307-44-XXXX
Eight hours: 200 ppm, 260 mg/m³, H

DNEL

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
Industrial, inhalative, Long-term - systemic effects, 0.229 mg/m³ (AF=50)
Industrial, dermal, Long-term - systemic effects, 0.065 mg/kg bw/d
general population, inhalative, Long-term - systemic effects, 0.057 mg/m³ (AF=100)
general population, dermal, Acute - systemic effects, 0.033 mg/kg bw/d (AF=400)
general population, oral, Long-term - systemic effects, 0.033 mg/kg bw/d (AF=400)
general population, oral, Acute - systemic effects, 375 µg/kg bw/day
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
Industrial, inhalative, Long-term - systemic effects, 229,2 µg/m³
Industrial, dermal, Long-term - systemic effects, 65 µg/kg bw/day
general population, dermal, Long-term - systemic effects, 32,5 µg/kg bw/day
general population, oral, Long-term - systemic effects, 32,5 µg/kg bw/day
general population, inhalative, Long-term - systemic effects, 56,5 µg/m³

PNEC

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
freshwater, 0.1 mg/L (AF=1000)
seawater, 0.01 mg/L (AF=10 000)
sewage treatment plants (STP), 2.15 mg/L (AF=10)
sediment (freshwater), 0.569 mg/kg dw
sediment (seawater), 0.057 mg/kg dw
soil, 0.044 mg/kg dw
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
freshwater, 103 µg/L
seawater, 10,3 µg/L
sewage treatment plants (STP), 2,22 mg/L
sediment (freshwater), 586 µg/kg sediment dw
sediment (seawater), 59 µg/kg sediment dw
soil, 45,6 µg/kg soil dw

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
Eye protection	Safety glasses. (EN 166:2001)
Hand protection	0,7 mm Butyl rubber, >480 min (EN 374-1/-2/-3). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Protective clothing (EN 340)
Other	Avoid contact with eyes and skin. Do not inhale vapours. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory protection	In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection. Short term: filter apparatus, filter A. (DIN EN 14387)
Thermal hazards	not applicable
Delimitation and monitoring of the environmental exposition	Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Form	pasty
Color	black
Odor	characteristic
Odour threshold	not determined
pH-value	not applicable
pH-value [1%]	not determined
Boiling point or initial boiling point and boiling range [°C]	not applicable
Flash point [°C]	not applicable
Flammability	not determined
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/cm³]	not determined
Relative density	not determined
Bulk density [kg/m³]	not applicable
Solubility in water [g/L]	virtually insoluble
Solubility other solvents	No information available.
Partition coefficient n-octanol/water (log value)	not determined
Kinematic viscosity	not applicable
Relative vapour density	not determined
Melting point [°C]	not determined
Auto-ignition temperature [°C]	not applicable
Decomposition temperature [°C]	>150
Particle characteristics	No information available.

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

See SECTION 10.3.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

not determined

10.6 Hazardous decomposition products

Contact with moisture liberates methanol and pentan-2-one oxime.
In the case of heating (150-180°C) following modest (decomposition) products may occure:
Formaldehyde.

SECTION 11: Toxicological information

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

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

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
LD50, oral, Rat, 1133 - 1234 mg/kg bw
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
LD50, oral, Rat, 1000 - 2000 mg/kg bw
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
LD50, oral, Rat, 2995 mg/kg

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

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
LD50, dermal, Rat, 2000 mg/kg bw
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
LD50, dermal, Rat, 2000 mg/kg bw
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
LD50, dermal, Rat, > 2000 mg/kg

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

Serious eye damage/irritation Based on available data, the classification criteria are not met.

Substance
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
Eye, irritant
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
Rabbit, OECD 405, Causes serious eye damage.

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
dermal, Rabbit, OECD 404, non-irritating
Eye, Rabbit, OECD 405, irritant
dermal, Guinea pig, OECD 406, non-sensitizing
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
dermal, non-irritating
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
Rabbit, OECD 404, Slight irritant effect - does not require labelling.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
May cause an allergic skin reaction.

Substance
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
dermal, non-sensitizing
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
dermal, Guinea pig, OECD 406, sensitising
dermal, mouse, OECD 429, sensitising

Specific target organ toxicity — single exposure Based on available data, the classification criteria are not met.

Specific target organ toxicity — repeated exposure Based on available data, the classification criteria are not met.

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5

NOAEL, oral, Rat, 13 mg/kg bw/day, OECD 408
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
NOAEL, oral, Rat, 13 mg/kg bw/day, systemic, subchronic,
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
NOAEL, oral, Rat, > 500 mg/kg (28d), OECD 422, no adverse effect observed

Mutagenicity Does not contain a relevant substance that meets the classification criteria.

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
InVitro, OECD 471, negativ
oral, Rat, InVivo, negativ
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
in vitro, negativ
in vivo, negativ
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
in vitro, OECD 471, negativ
in vitro, OECD 476, negativ

Reproduction toxicity Does not contain a relevant substance that meets the classification criteria.

- Fertility

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
NOAEL, Rat, 99 mg/kg bw/day
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
NOAEL, oral, Rat, 103 mg/kg bw/day, fertility, subacute,
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
NOAEL, oral, Rat, >= 500 mg/kg, OECD 422

- Development

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
NOAEL, Rat, 99 mg/kg bw/day
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
NOAEL, oral, Rat, 175 mg/kg bw/day, developmental, subacute,
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
NOAEL, oral, Rat, >= 500 mg/kg, OECD 422

Carcinogenicity Does not contain a relevant substance that meets the classification criteria.

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

General remarks

Toxicological data of complete product are not available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

11.2.2 Other information none

SECTION 12: Ecological information

12.1 Toxicity

Ecological data of complete product are not available.

Substance
O,O',O''-(methylsilylidyne)trioxime 2-pentanone, CAS: 37859-55-5
LC50, (96h), Fish, 113 mg/L
EC50, (48h), Daphnia magna, 113 mg/L
EC50, (72h), Algae, 100 mg/L
2-Pentanone, O,O',O''-(ethenylsilylidyne)trioxime, CAS: 58190-62-8
LC50, (96h), Fish, 100 - 117 mg/L
EC50, (48h), Daphnia magna, 100 - 117 mg/L
EC50, (72h), Algae, 50 - 103 mg/L
N-[3-(Trimethoxysilyl)propyl]ethylenediamine, CAS: 1760-24-3
LC50, (96h), Danio rerio, 597 mg/l
EC50, (48h), Daphnia magna, 81 mg/l
EC50, (16h), Pseudomonas putida, 67 mg/l
IC50, (72h), Algae, 8,8 mg/l (OECD 201)
NOEC, (72h), Algae, 3,1 mg/l (OECD 201)
NOEC, (21d), Daphnia magna, > 1 mg/l
NOEC, (14d), >= 1000 mg/kg (Eisenia fetida; OECD 207)

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

12.3 Bioaccumulative potential

not determined

12.4 Mobility in soil

not determined

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

For recycling, consult manufacturer.
Disposal in an incineration plant in accordance with the regulations of the local authorities.

Waste no. (recommended) 070217

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Dispose full / partially emptied cartridges as hazardous waste in accordance with official regulations.

Waste no. (recommended) 150102

SECTION 14: Transport information

14.1 UN number or ID number

Transport by land according to ADR/RID	not applicable
Inland navigation (ADN)	not applicable
Marine transport in accordance with IMDG	not applicable
Air transport in accordance with IATA	not applicable

14.2 UN proper shipping name

Transport by land according to ADR/RID	NO DANGEROUS GOODS
Inland navigation (ADN)	NO DANGEROUS GOODS
Marine transport in accordance with IMDG	NOT CLASSIFIED AS "DANGEROUS GOODS"
Air transport in accordance with IATA	NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	not applicable
Inland navigation (ADN)	not applicable
Marine transport in accordance with IMDG	not applicable
Air transport in accordance with IATA	not applicable

14.4 Packing group

Transport by land according to ADR/RID	not applicable
Inland navigation (ADN)	not applicable
Marine transport in accordance with IMDG	not applicable
Air transport in accordance with IATA	not applicable

14.5 Environmental hazards

Transport by land according to ADR/RID	no
Inland navigation (ADN)	no
Marine transport in accordance with IMDG	no
Air transport in accordance with IATA	no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	2008/98/EG (2000/532/EC); 2010/75/EU; 2004/42/EG; (EG) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EWG ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 2024/573; (EU) 2019/1148; (EU) 2019/1021, (EU) 2023/707
- Comment on component parts	Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
- Annex XIV (REACH)	According to Annex XIV of Regulation (EC) 1907/2006 (REACH) the product does not contain any substances ≥ 0.1% that are subject to authorisation.
- Annex XVII (REACH)	According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product contains ≥ 0.1% of substances with the following restrictions. 75
	According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product is not subject to any restrictions.
TRANSPORT-REGULATIONS	ADR (2025); IMDG-Code (2025, 42. Amdt.); IATA-DGR (2025)
NATIONAL REGULATIONS (EU):	
- Observe employment restrictions for people	no
- VOC (2010/75/CE)	0 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H335 May cause respiratory irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.
H302 Harmful if swallowed.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ATE = acute toxicity estimate
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
EL50 = Median effective loading
ELINCS = European List of Notified Chemical Substances
EmS = Emergency Schedules
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
IVIS = In vitro irritation score
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
LL50 = Median lethal loading
LQ = Limited Quantities
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
STP = Sewage Treatment Plant
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

This document does not comply with Regulation (EC) No 1907/2006, article 31 (5) and may be used for internal purposes only.

Modified position none

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