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

1.1 Product identifier

Viessmann Dampfdestillat
Article number: 6850

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

1.2.1 Relevant uses

Steam generation in smoke generators for the model railway

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Viessmann Modelltechnik GmbH
Bahnhofstraße 2a
35116 Hatzfeld-Reddighausen / GERMANY
Phone +49(0)6452 93400
Fax +49(0)6452 934019
Homepage www.viessmann-modell.de
E-mail info@viessmann-modell.com

Address enquiries to

Technical information info@viessmann-modell.com

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Advisory body +49 (0) 6131-19240 (24h)

SECTION 2: Hazards identification

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

Flam. Liq. 3: H226 Flammable liquid and vapour.
Asp. Tox. 1: H304 May be fatal if swallowed and enters airways.
Skin Sens. 1: H317 May cause an allergic skin reaction.
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

Hazard pictograms

Signal word DANGER

Contains: Hydrocarbons, C11-C14, isoalkanes, cyclics, < 2% aromatics

Hydrocarbons, C11-C13, isoalkanes, <2% aromatics

Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics

Orange sweetly, Extract

Hazard statements
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

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.
P261 Avoid breathing vapours.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER / doctor.
P331 Do NOT induce vomiting.
P333+P313 If skin irritation or rash occurs: Get medical advice / attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/national regulation.

Special labelling EUH066 Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards

Physico-chemical hazards Evolution of flammable mixtures possible in air when heated above flash point and/or during spraying or misting.

Environmental hazards Does not contain any PBT or vPvB substances.

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

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
10 - 50	Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics
	CAS: 90622-57-4, EINECS/ELINCS: 918-167-1, Reg-No.: 01-2119472146-39-XXXX
	GHS/CLP: Flam. Liq. 3: H226 - Asp. Tox. 1: H304 - Aquatic Chronic 4: H413
10 - 50	Hydrocarbons, C11-C13, isoalkanes, <2% aromatics
	EINECS/ELINCS: 920-901-0, Reg-No.: 01-2119456810-40-XXXX
	GHS/CLP: Asp. Tox. 1: H304
50 - < 100	Hydrocarbons, C11-C14, isoalkanes, cyclics, < 2% aromatics
	EINECS/ELINCS: 927-285-2, Reg-No.: 01-2119480162-45-XXXX
	GHS/CLP: Asp. Tox. 1: H304
2,5 - <10	Orange sweetly, Extract
	CAS: 8028-48-6, EINECS/ELINCS: 232-433-8, Reg-No.: 01-2119493353-35-XXXX
	GHS/CLP: Flam. Liq. 3: H226 - Asp. Tox. 1: H304 - Skin Irrit. 2: H315 - Skin Sens. 1: H317 - Aquatic Chronic 2: H411

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
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
Remove person to fresh air and keep comfortable for breathing.
In the event of symptoms seek medical treatment.

Skin contact
When in contact with the skin, clean 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
Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

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
Foam, dry powder, water spray jet, carbon dioxide.

Extinguishing media that must not be used
Full water jet.

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Do not inhale explosion and/or combustion gases.

Cool containers at risk with water spray jet.
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

Keep away from all sources of ignition.
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

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. sand).
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.

Keep away from all sources of ignition - Refrain from smoking.
Vapours can form an explosive mixture with air.
Ignitable mixtures can be formed in the empty container.
Use explosion-proofed equipment/fittings and non-sparkling tools.
Take precautionary measures against static discharges.

Take off contaminated clothing and wash before reuse.
Do not eat, drink or smoke when using this product.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.
Contaminated work clothing should not be allowed out of the workplace.
Cloths contaminated with product should not be kept in trouser pockets.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.

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

Keep container tightly closed.
Keep container in a well-ventilated place.
Protect from heat/overheating and from sun.

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 (GB)

Substance
Hydrocarbons, C11-C14, isoalkanes, cyclics, < 2% aromatics
EINECS/ELINCS: 927-285-2, Reg-No.: 01-2119480162-45-XXXX
Long-term exposure: 1200 mg/m³
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics
EINECS/ELINCS: 920-901-0, Reg-No.: 01-2119456810-40-XXXX
Long-term exposure: 1200 mg/m³
Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics
CAS: 90622-57-4, EINECS/ELINCS: 918-167-1, Reg-No.: 01-2119472146-39-XXXX
Long-term exposure: 1200 mg/m³

DNEL

Substance
Orange sweetly, Extract, CAS: 8028-48-6
Industrial, dermal, Acute - local effects: 185,8 µg/cm².
Industrial, dermal, Long-term - systemic effects: 8,89 mg/kg bw/day.
Industrial, inhalative (vapor), Long-term - systemic effects: 31,1 mg/m³.
general population, oral, Long-term - systemic effects: 4,44 mg/kg bw/day.
general population, dermal, Acute - local effects: 92,9 µg/cm².
general population, dermal, Long-term - systemic effects: 4,44 mg/kg bw/day.
general population, inhalative (vapor), Long-term - systemic effects: 7,78 mg/m³.

PNEC

Substance
Orange sweetly, Extract, CAS: 8028-48-6
soil, 0,261 mg/kg.
sediment (seaater), 0,13 mg/kg.
sediment (freshwater), 1,3 mg/kg.
sewage treatment plants (STP), 2,1 mg/L.
seawater, 0,54 µg/L.
freshwater, 5,4 µg/L.

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	0,4 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.
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	Respiratory protection mask in the event of high concentrations. Short term: filter apparatus, combination filter A-P2. (DIN EN 14387)
Thermal hazards	none
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

Form	liquid
Color	colourless
Odor	characteristic
Odour threshold	not required
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	182 - 205
Flash point [°C]	53
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	0,5 Vol.-%
Upper explosion limit	6,0 Vol.-%
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	0,1 (20°C)
Density [g/ml]	0,76 (20 °C / 68,0 °F)
Bulk density [kg/m³]	not applicable
Solubility in water	virtually insoluble
Partition coefficient [n-octanol/water]	No information available.
Viscosity	< 20,5 mm²/s 40°C
Relative vapour density determined in air	No information available.
Evaporation speed	No information available.
Melting point [°C]	No information available.
Autoignition temperature [°C]	> 200
Decomposition temperature [°C]	not determined

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

Evolution of flammable mixtures possible in air when heated above flash point and/or during spraying or misting.

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

10.5 Incompatible materials

Oxidizing agent

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
ATE-mix, inhalation (vapour), > 20 mg/l 4h.
ATE-mix, dermal, > 2000 mg/kg.
ATE-mix, oral, > 2000 mg/kg.

Substance
Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics, CAS: 90622-57-4
LD50, oral, Rat: > 5000 mg/kg OECD 401.
LD50, dermal, Rabbit: > 5000 mg/kg OECD 402.
LC50, inhalative, Rat: > 5000 mg/m³ 8h, OECD 403.
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics
LD50, dermal, Rabbit: > 3160 mg/kg (IUCLID).
LD50, oral, Rat: > 5000 mg/kg (IUCLID).
LC50, inhalative, Human: 5000 mg/m³/8h (OECD 403).
LC50, inhalative, Rat: > 290 ppm 4h (IUCLID).
Hydrocarbons, C11-C14, isoalkanes, cyclics, < 2% aromatics
LD50, dermal, Rabbit: > 5000 mg/kg.
LD50, oral, Rat: > 5000 mg/kg.
NOAEL, inhalative, Rat: >5 mg/L.
Orange sweetly, Extract, CAS: 8028-48-6
LD50, dermal, Rabbit: > 2000 mg/kg.
LD50, oral, Rat: > 4400 mg/kg.

Serious eye damage/irritation
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Skin corrosion/irritation
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Respiratory or skin sensitisation
May cause an allergic skin reaction.
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Calculation method

Specific target organ toxicity — single exposure
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.

Specific target organ toxicity — repeated exposure
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Mutagenicity
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Reproduction toxicity
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Carcinogenicity
Does not contain a relevant substance that meets the classification criteria.
Based on the available information, the classification criteria are not fulfilled.
Toxicological data of complete product are not available.

Aspiration hazard
May be fatal if swallowed and enters airways.
Based on the available information, the classification criteria are fulfilled.
On basis of test data

General remarks

none

SECTION 12: Ecological information

12.1 Toxicity

Substance
Hydrocarbons, C11-C12, isoalkanes, < 2% aromatics, CAS: 90622-57-4
EL0, (48h), Daphnia magna: 1000 mg/L.
NOELR, (21d), Daphnia magna: >=1 mg/L.
NOELR, (72h), Pseudokirchneriella subcapitata: 1000 mg/L.
LL0, (96h), Oncorhynchus mykiss: 1000 mg/L.
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics
LC50, (96h), fish: 2890 mg/l (IUCLID).
EC50, (48h), Daphnia magna: < 100 mg/l (IUCLID).
EL0, (48h), Daphnia magna: 1000 mg/l.
EL0, (72h), Pseudokirchneriella subcapitata: 1000 mg/l.
NOELR, (21d), Daphnia magna: 1 mg/l.
NOELR, (72h), Pseudokirchneriella subcapitata: 1000 mg/l.
LL0, (96h), Oncorhynchus mykiss: 1000 mg/l.
Hydrocarbons, C11-C14, isoalkanes, cyclics, < 2% aromatics
LC50, (96h), fish: > 1000 mg/l.
EC50, (72h), Algae: > 1000 mg/l.
EC50, (48h), Daphnia magna: > 1000 mg/l.
Orange sweetly, Extract, CAS: 8028-48-6
LC50, (96h), Pimephales promelas: 0,7 mg/L.
EC50, (48h), Daphnia magna: 0,4 mg/L.
NOEC, (96h), Algae: 4 mg/L.

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

Accumulation in organisms is not expected.

12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

12.5 Results of PBT and vPvB assessment

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

12.6 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

Disposal in an incineration plant in accordance with the regulations of the local authorities. Coordinate disposal with the authorities if necessary.

Waste no. (recommended) 070104*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended) 150110*

SECTION 14: Transport information

14.1 UN number

Transport by land according to ADR/RID	1993
Inland navigation (ADN)	1993
Marine transport in accordance with IMDG	1993
Air transport in accordance with IATA	1993

14.2 UN proper shipping name

Transport by land according to ADR/RID	Flammable liquid, n.o.s. (Hydrocarbons, C11-C14, isoalkanes, cycloalkanes, <2% aromatics, orange sweet, extract)
- Classification Code	F1
- Label	
- ADR LQ	5 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 3 (D/E)
Inland navigation (ADN)	Flammable liquid, n.o.s. (Hydrocarbons, C11-C14, isoalkanes, cycloalkanes, <2% aromatics, orange sweet, extract)
- Classification Code	F1
- Label	
Marine transport in accordance with IMDG	Flammable liquid, n.o.s. (Hydrocarbons, C11-C14, isoalkanes, cycloalkanes, <2% aromatics, orange sweet, extract)
- EMS	F-E, S-E
- Label	
- IMDG LQ	5 l
Air transport in accordance with IATA	Flammable liquid, n.o.s. (Hydrocarbons, C11-C14, isoalkanes, cycloalkanes, <2% aromatics, orange sweet, extract)
- Label	

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	3
Inland navigation (ADN)	3
Marine transport in accordance with IMDG	3
Air transport in accordance with IATA	3

14.4 Packing group

Transport by land according to ADR/RID	III
Inland navigation (ADN)	III
Marine transport in accordance with IMDG	III
Air transport in accordance with IATA	III

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

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); (EU) 2015/830; (EU) 2016/131; (EU) 517/2014
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2017); IMDG-Code (2017, 38. Amdt.); IATA-DGR (2018).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011).
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (2010/75/CE)	100 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 03)

H411 Toxic to aquatic life with long lasting effects.
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.
H413 May cause long lasting harmful effects to aquatic life.
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.

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
ELINCS = European List of Notified Chemical Substances
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
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
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

Classification procedure

Flam. Liq. 3: H226 Flammable liquid and vapour. (On basis of test data)
Asp. Tox. 1: H304 May be fatal if swallowed and enters airways. (On basis of test data)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects. (Calculation method)

Modified position

none

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