Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)

Trade name :	SKYLT Original Verharder		
Revision date :	01.11.2018	**Version :**	1.0.0
Print date :	14-11-2018		

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

1.1 Product identifier
SKYLT Original Verharder

1.2 Relevant identified uses of the substance or mixture and uses advised against
The product is intended for professional use.

Relevant identified uses
Hardener for coating materials

1.3 Details of the supplier of the safety data sheet
Supplier (manufacturer/importer/only representative/downstream user/distributor)
RIGO Verffabriek BV

Street : Dokweg 40

Postal code/city : 1976 CA IJmuiden

Information contact : Safety, Health & Environment: she@rigoverffabriek.nl

1.4 Emergency Telephone Number:
+31 (0)255 548448 (Office hours 08:00 - 16:30 GMT +1) Outside office hours: call a Poison Center or doctor/physician.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [CLP]
Aquatic Chronic 3 ; H412 - Hazardous to the aquatic environment : Chronic 3 ; Harmful to aquatic life with long lasting effects.

Acute Tox. 4 ; H332 - Acute toxicity (inhalative) : Category 4 ; Harmful if inhaled.

Skin Sens. 1B ; H317 - Skin sensitisation : Category 1B ; May cause an allergic skin reaction.

STOT SE 3 ; H335 - STOT-single exposure : Category 3 ; May cause respiratory irritation.

Classification procedure

H317: Obtained on the basis of the calculation method
H332: Obtained on the basis of the calculation method
H335: Obtained on the basis of the calculation method
H412: Obtained on the basis of the calculation method

2.2 Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
Hazard pictograms

Exclamation mark (GHS07)

Signal word

Warning

Hazard components for labelling

ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3

Hazard statements

H332	Harmful if inhaled.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P261	Avoid breathing mist/spray.
P271	Use only outdoors or in a well-ventilated area.
P312	Call a POISON CENTER or doctor if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Special rules for supplemental label elements for certain mixtures

EUH204	Contains isocyanates. May produce an allergic reaction.

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3

Weight fraction :	≥ 50 - < 75 %
Classification 1272/2008 [CLP] :	Acute Tox. 4 ; H332 Skin Sens. 1B ;H317 STOT SE 3 ; H335 Aquatic Chronic 3 ; H412

Additional information

Full text of H- and EUH-phrases: see section 16.

Components according to regulation (EG) Nr. 648/2004

None

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice. Never give anything by mouth to an unconscious person or a person with cramps.

Following inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position and seek medical advice.

In case of skin contact

Change contaminated, saturated clothing. After contact with skin, wash immediately with plenty of water and soap. Clean with detergents. Avoid solvent cleaners.

After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Notes for the doctor: First Aid, decontamination, treatment of 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

alcohol resistant foam, Carbon dioxide (CO2), Extinguishing powder, Water spray jet

Unsuitable extinguishing media

Strong water jet

5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon dioxide (CO2), Nitrogen oxides (NOx), Isocyanates, Hydrogen cyanide (hydrocyanic acid), In case of fire and/or explosion do not breathe fumes.

5.3 Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Special protective equipment for firefighters

Cool endangered containers with water in case of fire. Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Protective equipment

Use personal protection equipment. Provide adequate ventilation. Remove all sources of ignition.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3 Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Add the decontaminant to the remnants and let stand for several days in a non-sealed container until no further reaction is observed. Once reaction is finished, close container and dispose of.

6.4 Reference to other sections

Disposal: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide adequate ventilation as well as local exhaustion at critical locations. Respiratory protection is required for not sufficiently ventilated working places and during the spraying processing. Use ventilation to extract vapours from freshly coated articles/objects and surfaces. Protection against fire and explosion required. Avoid contact with skin, eyes and clothes. Do not breathe gas/vapour/aerosol. When using do not eat, drink, smoke, sniff. Wash hands before eating, drinking or smoking. Keep work clothes separately. Take off immediately all contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool, well-ventilated place.

7.3 Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Available hazard data do not support the need for a DNEL to be established for other health effects.

8.2 Exposure controls

Personal protection equipment

Eye/face protection

Eye glasses with side protection.

Skin protection

Wear suitable working clothes.

Hand protection

Suitable gloves type Protective gloves according to DIN EN 374 IIR (butyl rubber), Thickness > 0,5 mm; Breakthrough time (maximum wearing time) > 480 min. FKM (fluoro rubber), Thickness > 0,4 mm; Breakthrough time (maximum wearing time) > 480 min. NBR (Nitrile rubber) Thickness > 0,35 mm; Breakthrough time (maximum wearing time) > 480 min. PVC (Polyvinyl chloride) Thickness > 0,5 mm; Breakthrough time (maximum wearing time) > 480 min. Check protective gloves before each use concerning their normal condition.

Respiratory protection

Respiratory protection is required for not sufficiently ventilated working places and during the spraying processing. Wear a respirator conforming to EN140 with Type A/P2 filter or better. People who suffer from skin sensitazion problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Colour : Colourless.

Odour : Noticeable.

Safety relevant basis data

Physical state :			liquid	
Melting point/melting range :			not relevant	
Freezing point :			not relevant	
Initial boiling point and boiling range :		approx.	175	°C
Decomposition temperature :			No data available	
Flash point :		approx.	61	°C
Ignition temperature :			No data available	
Lower explosion limit :			No data available	
Upper explosion limit :			No data available	
Vapour pressure :	(50 °C)		No data available	
Density - dependent of color:	(20 °C)	approx.	1,06	g/cm^3
Bulk density :			No data available	
Relative density :	(20 °C)		No data available	
Water solubility :	(20 °C)		insoluble	
pH :			not relevant	
log P O/W :			No data available	
Viscosity :	(20 °C)		No data available	
Cinematic viscosity :	(40 °C)	<	20,5	mm^2/s
Solid content :		approx.	65	Wt %
Odour threshold :			No data available	
Relative vapour density :	(20 °C)		No data available	
Vapourisation rate :			No data available	
Flammable solids :	Not applicable.			
Flammable gases :	Not applicable.			
Oxidising liquids :	Not determined.			
Explosive properties :	Not relevant.			

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity
No information available.

10.2 Chemical stability
No information available.

10.3 Possibility of hazardous reactions
No information available.

10.4 Conditions to avoid
No information available.

10.5 Incompatible materials
Exothermic reaction with: Amines, Alcohols, Water.

10.6 Hazardous decomposition products
No information available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity

Parameter :	LD50 (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Exposure route :	Oral
Species :	Rat
Effective dose :	> 2000 mg/kg
Parameter :	LD50 (DIPROPYLENGLYKOLDIMETHYLETHER ; CAS No. : 111109-77-4)
Exposure route :	Oral
Species :	Rat
Effective dose :	3300 mg/kg
Parameter :	LD50 (HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0)
Exposure route :	Oral
Species :	Rat
Effective dose :	710 mg/kg

Acute dermal toxicity

Parameter :	LD50 (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Exposure route :	Dermal
Species :	Rat
Effective dose :	> 2000 mg/kg
Method :	OECD 402
Parameter :	LD50 (DIPROPYLENGLYKOLDIMETHYLETHER ; CAS No. : 111109-77-4)
Exposure route :	Dermal
Species :	Rabbit
Effective dose :	2001 mg/kg
Parameter :	LD50 (HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0)
Exposure route :	Dermal
Species :	Rabbit
Effective dose :	570 mg/kg

Acute inhalation toxicity

Parameter :	ATE
Exposure route :	Inhalative (dust, mist)
Effective dose :	1,5 mg/l
Method :	Opinion of experts

Parameter :	ATEmix calculated
Exposure route :	Inhalative (dust, mist)
Effective dose :	2,31 mg/l
Exposure time :	4 h
Parameter :	LC50 (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Exposure route :	Inhalative (dust, mist)
Species :	Rat
Effective dose :	0,39 mg/l
Exposure time :	4 h
Method :	OECD 403
Parameter :	LC50 (HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0)
Exposure route :	Inhalation
Species :	Mouse
Effective dose :	1570 mg/m^3

Irritant and corrosive effects

Primary irritation to the skin

Parameter :	Primary irritation to the skin (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Species :	Rabbit
Result :	Slightly irritant
Method :	OECD 404

Irritation to eyes

Parameter :	Irritation to eyes (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Species :	Rabbit
Result :	Slightly irritant
Method :	OECD 405

Irritation to respiratory tract

No information available.

Sensitisation

In case of skin contact

Parameter :	Skin sensitisation (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Species :	guinea pig
Result :	Sensitising. Other skin sensitiser (Subcategory 1B).
Method :	OECD 406

In case of inhalation

Parameter :	Sensitisation to the respiratory tract (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Species :	guinea pig
Result :	Not sensitising.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No information available.

Germ cell mutagenicity

No information available.

Genotoxicity

Parameter :	Genotoxicity (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Exposure route :	In vitro mutagenicity
Test result :	Ames test negative.
Method :	OECD 471 (Ames test)

Reproductive toxicity

No information available.

STOT-single exposure

No information available.

STOT-repeated exposure

No information available.

Aspiration hazard

No information available.

11.5 Additional information

Over-exposure, especially when spraying coatings containing isocyanate without the necessary precautions, entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the occupational exposure limit. Prolonged contact with the skin may cause tanning and irritant effects. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction.

SECTION 12: Ecological information

Do not allow to enter ground-water, surface water or drains, even not in small quantities.

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

Parameter :	LC50 (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Species :	Danio rerio
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	28,3 mg/l
Exposure time :	96 h
Method :	OECD 203

Acute (short-term) daphnia toxicity

Parameter :	EC50 (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Species :	Daphnia magna (Big water flea)
Evaluation parameter :	Acute (short-term) daphnia toxicity
Effective dose :	> 100 mg/l
Exposure time :	48 h
Method :	OECD 202

Acute (short-term) algae toxicity

Parameter :	ErC50 (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Species :	Scenedesmus subspicatus
Evaluation parameter :	Acute (short-term) algae toxicity
Effective dose :	> 100 mg/l
Exposure time :	72 h
Method :	OECD 201

Bacteria toxicity

Parameter :	EC50 (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Species :	Bacteria toxicity
Effective dose :	10000 mg/l
Method :	OECD 209

12.2 Persistence and degradability

Biodegradation

Parameter :	Biodegradation (ALIPHATIC POLYISOCYANATE ; CAS No. : 160994-68-3)
Effective dose :	2 %
Exposure time :	28 dagen
Evaluation :	Not readily biodegradable (according to OECD criteria)
Method :	OECD 301F/ ISO 9408/ EEC 92/69/V, C.4-D

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Isocyanate reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. Previous experience shows that polyurea is inert and non-degradable.

12.7 Additional ecotoxicological information

None

SECTION 13: Disposal considerations

Dispose of waste according to applicable legislation.

13.1 Waste treatment methods

These containers can be returned for recycling to the appropriate centres set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

SECTION 14: Transport information

14.1 UN number

No dangerous good in sense of these transport regulations.

14.2 UN proper shipping name

No dangerous good in sense of these transport regulations.

14.3 Transport hazard class(es)

No dangerous good in sense of these transport regulations.

14.4 Packing group

No dangerous good in sense of these transport regulations.

14.5 Environmental hazards

No dangerous good in sense of these transport regulations.

14.6 Special precautions for user

No dangerous good in sense of these transport regulations. Moisture-sensitive. Do not expose to temperatures above 50 °C. Keep away from foodstuffs, acids and alkalis.

SECTION 15: Regulatory information

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

None

15.2 Chemical safety assessment

Chemical safety assessments for substances in this preparation were not carried out.

SECTION 16: Other information

16.1 Indication of changes

None

16.2 Abbreviations and acronyms

a.i. = Active ingredient
ACGIH = American Conference of Governmental Industrial Hygienists (US)
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AFFF = Aqueous Film Forming Foam
AISE = International Association for Soaps, Detergents and Maintenance Products (joint project of AISE and CEFIC)
AOAC = AOAC International (formerly Association of Official Analytical Chemists)
aq. = Aqueous
ASTM = American Society of Testing and Materials (US)
atm = Atmosphere(s)
B.V. = Beperkt Vennootschap (Limited)
BCF = Bioconcentration Factor
bp = Boiling point at stated pressure
bw = Body weight
ca = (Circa) about
CAS No = Chemical Abstracts Service Number (see ACS - American Chemical Society)
CEFIC = European Chemical Industry Council (established 1972)
CIPAC = Collaborative International Pesticides Analytical Council
CLP = REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
Conc = Concentration
cP = CentiPoise
cSt = Centistokes
d = Day(s)
DIN = Deutsches Institut für Normung e.V.
DNEL = Derived No-Effect Level
DT50 = Time for 50% loss; half-life
EbC50 = Median effective concentration (biomass, e.g. of algae)
EC = European Community; European Commission
EC50 = Median effective concentration
EINECS = European Inventory of Existing Commercial Chemical Substances (EU, outdated, now replaced by EC Number)
ELINCS = European List of Notified (New) Chemicals (see Tab 7, Background - Guide)
ErC50 = Median effective concentration (growth rate, e.g. of algae)
EU = European Union
EWC = European Waste Catalogue
FAO = Food and Agriculture Organization (United Nations)
GIFAP = Groupement International des Associations Nationales de Fabricants de Produits Agrochimiques (now CropLife International)
h = Hour(s)
hPa = HectoPascal (unit of pressure)
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Concentration that produces 50% inhibition
IMDG Code = International Maritime Dangerous Goods Code
IMO = International Maritime Organization
ISO = International Organization for Standardization
IUCLID = International Uniform Chemical Information Database
IUPAC = International Union of Pure and Applied Chemistry
kg = Kilogram
Kow = Distribution coefficient between n-octanol and water
kPa = KiloPascal (unit of pressure)
LC50 = Concentration required to kill 50% of test organisms
LD50 = Dose required to kill 50% of test organisms
LEL = Lower Explosive Limit/Lower Explosion Limit
LOAEL = Lowest observed adverse effect level
mg = Milligram
min = Minute(s)
ml = Milliliter
mmHg = Pressure equivalent to 1 mm of mercury (133.3 Pa)
mp = Melting point
MRL = Maximum Residue Limit

MSDS = Material Safety Data Sheet
n.o.s. = Not Otherwise Specified
NIOSH = National Institute for Occupational Safety and Health (US)
NOAEL = No Observed Adverse Effect Level
NOEC = No observed effect concentration
NOEL = No Observable Effect Level
NOx = Oxides of Nitrogen
OECD = Organization for Economic Cooperation and Development
OEL = Occupational Exposure Limits
Pa = Pascal (unit of pressure)
PBT = Persistent, Bioaccumulative or Toxic
pH = -log10 hydrogen ion concentration
pKa = -log10 acid dissociation constant
PNEC = Previsible Non Effect Concentration
POPs = Persistent Organic Pollutants
ppb = Parts per billion
PPE = Personal Protection Equipment
ppm = Parts per million
ppt = Parts per trillion
PVC = Polyvinyl Chloride
QSAR = Quantitative Structure-Activity Relationship
REACH = Registration, Evaluation and Authorization of CHemicals (EU, see NCP)
SI = International System of Units
STEL = Short-Term Exposure Limit
tech. = Technical grade
TSCA = Toxic Substances Control Act (US)
TWA = Time-Weighted Average
vPvB = Very Persistent and Very Bioacccumulative
WHO = World Health Organization = OMS
y = Year(s)

16.3 Key literature references and sources for data

None

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

The classification of mixtures and applied evaluation method in accordance with regulation (EC) Nr. 1272/2008 [CLP] has been appointed in section 2.1

16.5 Relevant H- and EUH-phrases (Number and full text)

H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

16.6 Training advice

None

16.7 Additional information

None

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.