



SAFETY DATA SHEET GRIPTOP HD HARDENER

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

1.1. Product identifier

Product name GRIPTOP HD HARDENER
Internal identification GRIPTOPHDH/11

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

Identified uses Component of polyurethane floor coating system
Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier

Don Construction Products Ltd.,
Hawthorn House
Helions Bumpstead Road
Haverhill
Suffolk
CB9 7AA
Tel: 01538 361799 Mon-Fri 08:30 - 17:00 (excl bank holidays)
Fax: 01538 361899
E-Mail: info.uk@dcp-int.com

1.4. Emergency telephone number

Emergency telephone 01538 361799 Mon-Fri 8.30am - 5.00pm (excluding Bank Holidays)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified
Health hazards Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1
- H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373
Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) Xn; R20, R48/20/21/22. Xi; R36/37/38. Carc. Cat. 3 R40. R42/43

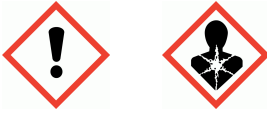
Human health See Section 11 for additional information on health hazards. May cause sensitisation by inhalation.

Environmental The product will harden into a solid mass in contact with water and moisture. The resultant material is not biodegradable.

2.2. Label elements

GRIPTOP HD HARDENER

Pictogram



Signal word

Danger

Hazard statements

H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 May cause respiratory irritation.
 H351 Suspected of causing cancer.
 H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe vapour/ spray.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P284 [In case of inadequate ventilation] wear respiratory protection.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P313 Get medical advice/ attention.

Contains

METHYLENEDIPHENYL DIISOCYANATE, DIPHENYLMETHANEDIISOCYANATE - ISOMERS & HOMOLOGUES

Supplementary precautionary statements

P264 Wash contaminated skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/ container in accordance with local regulations.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

METHYLENEDIPHENYL DIISOCYANATE	60-100%
CAS number: 26447-40-5	EC number: 247-714-0
Classification Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373	Classification (67/548/EEC or 1999/45/EC) Carc. Cat. 3;R40 Xn;R20,R48/20 Xi;R36/37/38 R42/43

GRIPTOP HD HARDENER

DIPHENYLMETHANEDIISOCYANATE - ISOMERS & HOMOLOGUES	10-30%
CAS number: 9016-87-9	
Classification Acute Tox. 2 - H330 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373	Classification (67/548/EEC or 1999/45/EC) Xn;R20,R48/20. Carc. Cat. 3;R40. Xi;R36/37/38. R42/43.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments Polyisocyanate pre-polymer

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Remove affected person from source of contamination.
Inhalation	Move affected person to fresh air at once. Get medical attention.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Ingestion	May cause discomfort if swallowed.
Skin contact	Skin irritation. May cause an allergic skin reaction.
Eye contact	Irritation of eyes and mucous membranes.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide or dry powder.

Unsuitable extinguishing media Do not use water, if avoidable.

5.2. Special hazards arising from the substance or mixture

GRIPTOP HD HARDENER

Specific hazards	Oxides of carbon. Oxides of nitrogen. Hydrogen cyanide (HCN).
Hazardous combustion products	Oxides of carbon. Oxides of nitrogen. When heated, vapours/gases hazardous to health may be formed.
5.3. Advice for firefighters	
Protective actions during firefighting	No specific firefighting precautions known.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.
-----------------------------	--

6.2. Environmental precautions

Environmental precautions	Avoid discharge into drains or watercourses or onto the ground.
----------------------------------	---

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Contain spillage with sand, earth or other suitable non-combustible material. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Do not close container tightly. Risk of excess pressure build-up.
--------------------------------	---

6.4. Reference to other sections

Reference to other sections	For personal protection, see Section 8. See Section 11 for additional information on health hazards. For waste disposal, see section 13.
------------------------------------	--

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Avoid inhalation of vapours. Provide adequate ventilation.
Advice on general occupational hygiene	Do not eat, drink or smoke when using this product. Good personal hygiene procedures should be implemented.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Keep separate from food, feedstuffs, fertilisers and other sensitive material. Store in tightly-closed, original container in a dry, cool and well-ventilated place.
----------------------------	--

7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.
----------------------------	---

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

METHYLENEDIPHENYL DIISOCYANATE

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³(Sen)

Short-term exposure limit (15-minute): WEL 0.07 mg/m³(Sen)

DIPHENYLMETHANEDIISOCYANATE - ISOMERS & HOMOLOGUES

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m³(Sen)

Short-term exposure limit (15-minute): WEL 0.07 mg/m³(Sen)

GRIPTOP HD HARDENER

WEL = Workplace Exposure Limit

8.2. Exposure controls

Appropriate engineering controls	Provide adequate general and local exhaust ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.
Personal protection	Always check applicability with your supplier of protective equipment.
Eye/face protection	If there is a risk of splashing, wear chemical resistant goggles or visor approved to BS EN166.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Nitrile gloves to BSEN374 are recommended. Break through times can vary depending on thickness, use and source. Change gloves regularly.
Other skin and body protection	Wear suitable protective clothing as protection against splashing or contamination. Wear apron or protective clothing in case of contact.
Hygiene measures	Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. Do not eat, drink or smoke when using this product.
Respiratory protection	In the case of hypersensitivity of the respiratory tract (eg asthmatics and those who suffer from chronic bronchitis) it is inadvisable to work with this product. In case of inadequate ventilation use a respirator suitable for organic vapours. Consult respirator manufacturer for specific advice.
Environmental exposure controls	Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Viscous liquid.
Colour	Dark. Brown.
Odour	Mild.
Odour threshold	Not determined.
pH	Not applicable.
Melting point	Not applicable.
Initial boiling point and range	200°C @
Flash point	>200°C CC (Closed cup).
Evaporation rate	Not applicable.
Evaporation factor	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not applicable.
Other flammability	Not applicable.
Vapour pressure	<0.01 Pa @ °C
Vapour density	Not determined.
Relative density	1.2 approx @ 20°C

GRIPTOP HD HARDENER

Bulk density	Not determined.
Solubility(ies)	Reacts with water.
Partition coefficient	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition Temperature	Not applicable.
Explosive properties	Not applicable.
Explosive under the influence of a flame	Not considered to be explosive.
Oxidising properties	Not known.
Comments	Information given is applicable to the product as supplied.

9.2. Other information

Other information	None.
Refractive index	Not determined.
Particle size	Not applicable.
Molecular weight	Not determined.
Volatility	Not determined.
Saturation concentration	Not determined.
Critical temperature	Not determined.
Volatile organic compound	Not determined.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	The product will harden into a solid mass in contact with water and moisture. Reactions with the following materials may generate heat: Acids. Alcohols, glycols. Amines.
-------------------	---

10.2. Chemical stability

Stability	Stable under the prescribed storage conditions.
------------------	---

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. No potentially hazardous reactions known.
---	---

10.4. Conditions to avoid

Conditions to avoid	Water, moisture.
----------------------------	------------------

10.5. Incompatible materials

Materials to avoid	Amines. Alcohols, glycols. Reacts with water forming carbon dioxide. Risk of bursting owing to increased pressure in closed containers.
---------------------------	---

10.6. Hazardous decomposition products

Hazardous decomposition products	Oxides of carbon. Oxides of nitrogen.
---	---------------------------------------

SECTION 11: Toxicological information

GRIPTOP HD HARDENER

11.1. Information on toxicological effects

Toxicological effects	No information available.
<u>Acute toxicity - oral</u>	
Notes (oral LD₅₀)	No specific test data are available.
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	No specific test data are available.
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	No specific test data are available.
ATE inhalation (vapours mg/l)	12.22
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Irritating to skin.
Animal data	No specific test data are available.
Human skin model test	No specific test data are available.
Extreme pH	No specific test data are available.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Irritation of eyes is assumed.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Sensitising.
<u>Skin sensitisation</u>	
Skin sensitisation	Sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	No specific test data are available.
Genotoxicity - in vivo	No specific test data are available.
<u>Carcinogenicity</u>	
Carcinogenicity	Suspected of causing cancer.
Target organ for carcinogenicity	No specific target organs known.
IARC carcinogenicity	Not listed.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	No specific test data are available.
Reproductive toxicity - development	Not considered to be toxic to the reproductive system.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	No specific test data are available.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
General information	The product contains small quantities of isocyanate. May cause respiratory allergy. May cause respiratory system irritation.

GRIPTOP HD HARDENER

Inhalation	Harmful by inhalation. Vapours irritate the respiratory system. May cause coughing and difficulties in breathing. May cause sensitisation by inhalation.
Ingestion	May cause discomfort if swallowed.
Skin contact	Prolonged or repeated contact may lead to skin sensitisation
Eye contact	Irritation of eyes and mucous membranes.
Acute and chronic health hazards	Prolonged exposure to the preparation may cause serious health effects. Frequent inhalation of vapours may cause respiratory allergy. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. May cause allergic contact eczema.
Route of entry	Inhalation Skin and/or eye contact
Target organs	Eyes Respiratory system, lungs Skin
Medical symptoms	Skin irritation. Irritation of eyes and mucous membranes. Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue. Nausea, vomiting. Prolonged or repeated exposure may cause the following adverse effects: Allergic rash. General respiratory distress, unproductive cough. Difficulty in breathing.
Medical considerations	Skin disorders and allergies. Pre-existing eye problems. Chronic respiratory and obstructive airway diseases.

METHYLENEDIPHENYL DIISOCYANATE

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 11.0

DIPHENYLMETHANEDIISOCYANATE - ISOMERS & HOMOLOGUES

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 10,000.0

Species Rat

ATE oral (mg/kg) 10,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 9,400.0

Species Rabbit

ATE dermal (mg/kg) 9,400.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 0.31

Species Rat

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 0.31

Species Rat

GRIPTOP HD HARDENER

ATE inhalation (dusts/mists mg/l)	0.31
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Based on available data the classification criteria are not met.
Animal data	Slightly irritating.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Ames test: Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	Dose level: 0-0.2, 1-6 mg/m ³ , Inhalation, Rat
Target organ for carcinogenicity	Respiratory system, lungs
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	No specific test data are available.
Reproductive toxicity - development	Teratogenicity: - NOAEL: 12 mg/m ³ , Inhalation, Rat Maternal toxicity: - NOAEL: 4 mg/m ³ , Inhalation, Rat Developmental toxicity: - NOAEL: 4 mg/m ³ , Inhalation, Rat
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	, Inhalation, A single exposure may cause the following adverse effects: Asthma, pulmonary sensitisation.
Target organs	Respiratory tract
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	, Inhalation, High concentrations may cause severe lung damage.
Target organs	Respiratory tract
<u>Aspiration hazard</u>	
Aspiration hazard	Not relevant.

SECTION 12: Ecological Information

Ecotoxicity The product should not be allowed to enter drains, sewers or watercourses.

12.1. Toxicity

Toxicity Not measured. Do not allow to enter waterways or drains

Acute toxicity - fish Not determined

Acute toxicity - aquatic invertebrates Not determined.

Acute toxicity - aquatic plants Not determined.

Acute toxicity - microorganisms Not determined.

Acute toxicity - terrestrial Not determined.

Chronic toxicity - fish early life stage Not determined.

GRIPTOP HD HARDENER

Short term toxicity - embryo and sac fry stages Not determined.

Chronic toxicity - aquatic invertebrates Not determined.

DIPHENYLMETHANEDIISOCYANATE - ISOMERS & HOMOLOGUES

Acute toxicity - fish	LC ₅₀ , 96 hours: >1000 mg/l, Brachydanio rerio (Zebra Fish)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 24 hours: >1000 mg/l, Daphnia magna
Acute toxicity - aquatic plants	, 72 hours: >1640 mg/l, Scenedesmus subspicatus
Acute toxicity - microorganisms	EC ₅₀ , 3 hours: >100 mg/l, Activated sludge
Acute toxicity - terrestrial	NOEC, 14 days: >1000 mg/kg, Eisenia Fetida (Earthworm)
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: >10 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability	The product reacts with water to form a solid, insoluble reaction product which is not biodegradable.
Phototransformation	Not determined.
Stability (hydrolysis)	Not determined.
Biodegradation	Not readily biodegradable.
Biological oxygen demand	Not determined.
Chemical oxygen demand	Not determined.

DIPHENYLMETHANEDIISOCYANATE - ISOMERS & HOMOLOGUES

Persistence and degradability	Not readily biodegradable.
Stability (hydrolysis)	Reacts with water.

12.3. Bioaccumulative potential

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	Not applicable.

DIPHENYLMETHANEDIISOCYANATE - ISOMERS & HOMOLOGUES

Bioaccumulative potential	BCF: < 14, Cyprinus carpio (Common carp)
----------------------------------	--

12.4. Mobility in soil

Mobility	The product is non-volatile.
Adsorption/desorption coefficient	Not determined.

GRIPTOP HD HARDENER

Henry's law constant Not determined.

Surface tension Not determined.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

DIPHENYLMETHANEDIISOCYANATE - ISOMERS & HOMOLOGUES

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

Disposal methods Should be disposed of as hazardous waste via a licensed waste operator.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

Transport labels

No transport warning sign required.

14.4. Packing group

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

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

SECTION 15: Regulatory information

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

National regulations Control of Substances Hazardous to Health Regulations 2002 (as amended).

Guidance

Workplace Exposure Limits EH40.
Safety Data Sheets for Substances and Preparations.

Authorisations (Title VII Regulation 1907/2006)

No specific authorisations are known for this product.

Restrictions (Title VIII Regulation 1907/2006)

No specific restrictions on use are known for this product.

GRIPTOP HD HARDENER

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

General information	Don Construction Products Ltd. Technical Datasheet.
Key literature references and sources for data	Health and Safety Executive Guidance Note EH40 (amended annually). Workplace Exposure Limits.
Revision comments	Section 1 update
Revision date	01/03/2017
Revision	11
Supersedes date	31/05/2016
SDS status	Approved.
Risk phrases in full	R20 Harmful by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R40 Limited evidence of a carcinogenic effect. R42/43 May cause sensitisation by inhalation and skin contact. R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
Hazard statements in full	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.