

Revision 1 Date Issued: January 2016

1. Identification of the substance/preparation and company

Product Name: Flowvin - Activator

Application: Curing agent resin based component of a 2 pack lining.
Mixed product is applied using a brush, roller and/or squeegee.

Manufacturer:

Flowcrete SA (Pty) Ltd, 176 Voortrekker Street, Jacobs 4052

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Website: <http://www.flowcretesa.co.za>

2. Composition/information on constituents

Components	CAS No.	Concentration (weight)
Dibutyl phthalate	84-74-2	< 45%
Methylenedianiline oligomers	25214-70-4	< 25%
Diaminodiphenyl methane, 4, 4'-	101-77-9	< 25%

CAS number 25214-70-4 is used to describe the complete composition of technical grade Methylenedianiline (MDA) which is present in this product. Technical grade MDA is a multi constituent substance so the classification of the product is also based on the classification of components which are not listed individually.
CHEMICAL FAMILY: Aromatic Amine

3. Hazards Identification

GHS classification

Acute toxicity - Oral Category 4
Skin sensitization - Category 1
Germ cell mutagenicity - Category 2
Carcinogenicity - Category 1B
Reproductive toxicity - Category 1B
Specific target organ toxicity - single exposure - Category 1
Specific target organ toxicity - repeated exposure - Category 2

GHS label elements

Hazard pictograms/symbols



Signal Word: Danger

Hazard Statements:

H302 :Harmful if swallowed.
H317 :May cause an allergic skin reaction.
H341 :Suspected of causing genetic defects
H350 :May cause cancer
H360 :May damage fertility or the unborn child
H370 :Causes damage to organs.

H373 :May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

Prevention : P201 :Obtain special instructions before use.
P202 :Do not handle until all safety precautions have been read and understood.
P260 :Do not breathe dust/fume/gas/mist/vapours/spray.
P264 :Wash hands thoroughly after handling.
P270 :Do not eat, drink or smoke when using this product.
P272 :Contaminated work clothing should not be allowed out of the workplace.
P280 :Wear eye protection/face protection.
P280e:Wear protective gloves.

Response : P307+P311 :If exposed: Call a POISON CENTER or doctor/physician.
P301+P312 :IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 :Rinse mouth.
P302+P352 :IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 :IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 :If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 :If eye irritation persists: Get medical advice/attention.
P363 :Wash contaminated clothing before reuse.

Storage : P405:Store locked up.

Disposal : P501:Disposal of contents/container to be specified in accordance with regulations.

Hazards not otherwise classified

Harmful if swallowed.
Investigated as a human carcinogen.
Reproductive toxin.
Mild skin irritant.
Mild eye irritant.
Mild respiratory tract irritant.
May cause sensitization by skin contact.

6.45 % of mixture consists of ingredients of unknown acute toxicity

4. First Aid measures

General advice : Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

Eye contact : Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses.

Skin contact : Wash off immediately with plenty of water for at least 20 minutes. Wash off with soap and water. Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Take off contaminated clothing and shoes immediately. NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation.

Ingestion : Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Prevent aspiration of vomit. Turn victim's head to the side.

Inhalation : If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.

Most important symptoms/effects - acute and delayed

: Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat. Liver disorders. Kidney disorders. Skin disorders and Allergies.

5. Fire-fighting measures

Suitable extinguishing media :	Alcohol-resistant foam. Carbon dioxide (CO ₂). Dry chemical. Dry sand. Limestone powder.
Specific hazards :	May generate ammonia gas. May generate toxic nitrogen oxide gases. Do not allow run-off from fire fighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Ammonia gas may be liberated at high temperatures. In case of incomplete combustion an increased formation of oxides of nitrogen (NO _x) is to be expected. Downwind personnel must be evacuated. Burning produces noxious and toxic fumes.
Special protective equipment for fire-fighters:	Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.
Further information :	Do not allow run-off from fire fighting to enter drains or water courses.

6. Accidental release measures

Personal Precautions, Protective Equipment, and Emergency Procedures:	Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.
Environmental precautions:	Construct a dike to prevent spreading. Construct a dike to prevent spreading.
Methods for cleaning up:	Approach suspected leak areas with caution. Contact Air Products' Emergency Response Center for advice. Place in appropriate chemical waste container.
Additional advice:	Open enclosed spaces to outside atmosphere. If possible, stop flow of product.

7. Handling and storage

Handling

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid breathing vapors and/or aerosols. Avoid contact with eyes. Use only in well-ventilated areas. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage

Keep away from oxidizers. Do not store near acids. Keep away from alkalis. Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical measures/Precautions

Do not store in reactive metal containers.

8. Exposure controls/personal protection

Engineering measures

Provide readily accessible eye wash stations and safety showers.

Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment

Respiratory protection : Wear appropriate respirator when ventilation is inadequate.

Hand protection : Neoprene gloves.

PVC disposable gloves

Loose fitting thermal insulated or leather gloves.

Nitrile rubber.

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Chemical safety glasses.

Skin and body protection : Long sleeve shirts and trousers without cuffs.

Environmental exposure controls: Construct a dike to prevent spreading.

Special instructions for protection and hygiene:

Discard contaminated leather articles. Provide readily accessible eye wash stations and safety showers. Wash hands at the end of each workshift and before eating, smoking or using the toilet. Provide readily accessible eye wash stations and safety showers.

Exposure Limits:

Dibutyl phthalate	Time Weighted Average (TWA): ACGIH	-	5 mg/m3
Dibutyl phthalate	Recommended exposure limit (REL): NIOSH	-	5 mg/m3
Dibutyl phthalate	Permissible exposure limit: OSHA Z1	-	5 mg/m3
Dibutyl phthalate	Time Weighted Average (TWA): OSHA Z1A	-	5 mg/m3
Dibutyl phthalate	Time Weighted Average (TWA) Permissible Exposure Limit (PEL): US CA OEL	-	5 mg/m3
Dibutyl phthalate	Time Weighted Average (TWA): TN OEL	-	5 mg/m3
Diaminodiphenyl methane, 4, 4'-	Time Weighted Average (TWA): ACGIH	0.1 ppm	-
Diaminodiphenyl methane, 4, 4'-	Time Weighted Average (TWA): OSHA	0.01 ppm	-
Diaminodiphenyl methane, 4, 4'-	Short Term Exposure Limit (STEL): OSHA	0.1 ppm	-
Diaminodiphenyl methane, 4, 4'-	OSHA Action level: OSHA	0.005 ppm	-
Diaminodiphenyl methane, 4, 4'-	Time Weighted Average (TWA) Permissible Exposure Limit (PEL): US CA OEL	0.01 ppm	0.08 mg/m3
Diaminodiphenyl methane, 4, 4'-	Short Term Exposure Limit (STEL): US CA OEL	0.1 ppm	0.8 mg/m3
Diaminodiphenyl methane, 4, 4'-	TWA Action Level: US CA OEL	0.005 ppm	-

9. Physical and chemical properties

Appearance	: Liquid, amber	pH	: No data available
Odour	: mild	Relative Density	: 1.12 (water = 1)
Boiling Point	: >200 °C	Water solubility	: Slightly soluble
Flashpoint	: >150 °C	Density	: 69.919 lb/ft ³ (1.12 g/cm ³) at 21 °C
Vapor pressure	: < 13.80 mmHg at 21 °C.		:

10. Stability and reactivity

Chemical Stability : Stable under normal conditions.

Conditions to avoid : No data available.

Materials to avoid : Oxidizing agents.
Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.
Sodium hypochlorite.
Organic acids (i.e. acetic acid, citric acid etc.).
Mineral acids.
Amines.
Incompatible with bases.
Reducing agents.
Acids.
Alkalies.

Hazardous decomposition products: In case of fire hazardous decomposition products may be produced such as:

Carbon monoxide.
Carbon dioxide (CO₂).
Nitrogen oxides (NO_x).
Nitrogen oxide can react with water vapors to form corrosive nitric acid.
Organic acid vapors.
Chlorine
Ammonia

Possibility of hazardous Reactions/Reactivity : No data available.

11. Toxicological information

11.1 Information on toxicological effects

Likely routes of exposure

Effects on Eye : Contact with eyes may cause irritation.

Effects on Skin : Mild skin irritation.

Inhalation Effects : May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.

Ingestion Effects : Harmful if swallowed.

Symptoms : Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat. Liver disorders., Kidney disorders., Skin disorders and Allergies.

Acute toxicity

Acute Oral Toxicity : LD50 : 1,560 mg/kg Species : Rat.

Inhalation : No data is available on the product itself.

Inhalation - Components

Diaminodiphenyl methane, 4, 4'- LC50 (4 h) : > 0.85 mg/l Species : Rat.

Acute Dermal Toxicity : No data is available on the product itself.

Acute Dermal Toxicity - Components

Dibutyl phthalate LD50 : > 20,000 mg/kg Species : Rabbit.

Methylenedianiline oligomers LD50 : > 20,000 mg/kg Species : Rabbit.

Skin corrosion/irritation : Mild skin irritation.

Serious eye damage/eye

Irritation : Mild eye irritation.

Sensitization. : No data available.

Chronic toxicity or effects from long term exposures

Carcinogenicity : May cause cancer

Reproductive toxicity : A component has been shown to cause reproductive/teratogenic effects in laboratory animals.

Germ cell mutagenicity : In vitro tests have shown mutagenic effects on bacterial cultures.

Specific target organ systemic

toxicity (single exposure : No data available.

Specific target organ systemic

toxicity (repeated exposure) : No data available.

Aspiration hazard : No data available.

Delayed and Immediate Effects and Chronic Effects from Short and Long Term Exposure

Diaminodiphenyl methane, 4, 4'- IARC : 2B - Possibly carcinogenic to humans.
ACGIH : Group A3 - Confirmed animal carcinogen with unknown relevance to humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.
NTP CARC : Reasonably Anticipated to be a Human Carcinogen.
OSHA : Cancer hazard.

Investigated as a human carcinogen., Reproductive toxin., May cause allergic skin reaction. This product contains listed carcinogen(s) according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Liver disorders., Kidney disorders., Skin disorders and Allergies.

Product contains methylenedianiline (MDA) which has been found to produce toxic hepatitis in man.

12. Ecological information

Ecotoxicity effects

Aquatic toxicity : No data is available on the product itself.

Toxicity to daphnia - Components

Dibutyl phthalate EC50 (48 h) : 2.99 mg/l Species : Daphnia

Toxicity to algae - Components

Dibutyl phthalate EC50 (48 h) : 3.5 mg/l Species : Algae.

Dibutyl phthalate

EC50 (48 h) : 9 mg/l

Species : Algae.

Toxicity to other organisms : No data available.

Persistence and degradability

Biodegradability : No data is available on the product itself.

Mobility : No data available.

Bioaccumulation : No data is available on the product itself.

Bioaccumulation - Components

Dibutyl phthalate High bioaccumulation potential.

13. Disposal considerations

Waste from residues / unused products : Contact supplier if guidance is required.

Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

14. Transport information

DOT

UN/ID No. : UN3082

Proper shipping name : Environmentally hazardous substances, liquid, n.o.s., (Methylenedianiline oligomers, Dibutyl phthalate)

Class or Division : 9

Packing group : III

Label(s) : 9

RQ Substance : Yes

Marine Pollutant : Yes

* NOTE: This product contains a USDOT Hazardous Substance and will meet the Reportable Quantity definition when shipped to, from, or within the United States, in the amount specified in 49CFR 172.101

Appendix A.

** NOTE: This product contains a substance that is regulated as a Marine Pollutant when transported in bulk packages (liquid – volume exceeding 450 liters, gas – water capacity exceeding 454 kilograms).

IATA

UN/ID No. : UN3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s., (Methylenedianiline oligomers, Dibutyl phthalate)

Class or Division : 9

Packing group : III

Label(s) : 9

RQ Substance : Yes

Marine Pollutant : Yes

* NOTE: This product contains a USDOT Hazardous Substance and will meet the Reportable Quantity definition when shipped to, from, or within the United States, in the amount specified in 49CFR 172.101 Appendix A.

** NOTE: This product contains a substance that: 1) is regulated as a Marine Pollutant, or 2) meets the definition of toxic to the aquatic environment.

IMDG

UN/ID No. : UN3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.,
(Methylenedianiline oligomers, Dibutyl phthalate)

Class or Division : 9

Packing group : III

Label(s) : 9

RQ Substance : Yes

Marine Pollutant : Yes

* NOTE: This product contains a USDOT Hazardous Substance and will meet the Reportable Quantity definition when shipped to, from, or within the United States, in the amount specified in 49CFR 172.101 Appendix A.

** NOTE: This product contains a substance that: 1) is regulated as a Marine Pollutant, or 2) meets the definition of toxic to the aquatic environment.

TDG

UN/ID No. : UN3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.,
(Methylenedianiline oligomers, Dibutyl phthalate)

Class or Division : 9

Packing group : III

Label(s) : 9

RQ Substance : Yes

Marine Pollutant : Yes

* NOTE: This product contains a USDOT Hazardous Substance and will meet the Reportable Quantity definition when shipped to, from, or within the United States, in the amount specified in 49CFR 172.101 Appendix A.

** NOTE: This product contains a substance that: 1) is regulated as a Marine Pollutant, or 2) meets the definition of toxic to the aquatic environment.

Further Information

The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact an Air Products customer service representative.

15. Regulatory information

Toxic Substance Control Act (TSCA) 12(b) Component(s):
None.

Country	Regulatory List	Notification
USA	TSCA	Included in inventory
EU	EINECS	Not compliant for sale in the EU according to the REACH regulations.
Canada	DSL	Included in inventory.
Australia	AICS	Included in inventory.
Japan	ENCS	Included in inventory
South Korea	ECL	Not on inventory
China	SEPA	Included on inventory
Philippines	PICCS	Included on inventory

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification
Chronic Health Hazard Acute Health Hazard

EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level
Dibutyl phthalate
Diaminodiphenyl methane, 4, 4'-
Manganese octoate

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
WARNING! This product contains a chemical known in the State of California to cause cancer.
Diaminodiphenyl methane, 4, 4'-

16. Other Information

HMIS Rating

Health : 3

Flammability : 1

Physical hazard : 0