

Safety Data Sheet

according to 29 CFR 1910.1200(g)

DINITROL 538 PLUS

Revision date: 01/11/2021

Product code: 10730

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1. Identification**Product identifier**

DINITROL 538 PLUS

Recommended use of the chemical and restrictions on use**Use of the substance/mixture**

Adhesion promoter

Details of the supplier of the safety data sheet**Manufacturer**

Company name: DINOL GmbH
Street: Pyrmonter Strasse 76
Place: D-32676 Luegde
Telephone: + 49 (0) 5281 982980
e-mail: msds@dinol.com
Contact person: Labor
Responsible Department: msds@dinol.com

Telefax: + 49 (0) 5281 9829860

Supplier

Company name: DINOL U.S. Inc.
Street: 8520 Cotter Street, Lewis Center
Place: USA-43035 Ohio
Telephone: 740-548-1656
e-mail: info@dinolus.com
Internet: www.dinol.com

Telefax: 740-548-1657

Emergency phone number: 3E Company Emergency +1-866-404-4230**2. Hazard(s) identification****Classification of the chemical****29 CFR Part 1910.1200**

Flammable liquids: Flam. Liq. 2
Serious eye damage/eye irritation: Eye Irrit. 2A
Respiratory or skin sensitization: Resp. Sens. 1
Respiratory or skin sensitization: Skin Sens. 1
Carcinogenicity: Carc. 2
Specific target organ toxicity single exposure: STOT SE 3 (narcotic effects)

Label elements**29 CFR Part 1910.1200****Signal word:** Danger**Pictograms:****Hazard statements**

Highly flammable liquid and vapor
May cause an allergic skin reaction
Causes serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause drowsiness or dizziness
Suspected of causing cancer

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Precautionary statements

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Avoid breathing dust/fume/gas/mist/vapors/spray.
 Wash hands thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Wear respiratory protection.
 If on skin: Wash with plenty of water.
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 Specific treatment (see on this label).
 Wash contaminated clothing before reuse.
 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
 Remove person to fresh air and keep comfortable for breathing.
 If experiencing respiratory symptoms: Call a poison center/doctor.
 If in eyes: 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.
 If exposed or concerned: Get medical advice/attention.
 In case of fire: Use Water spray jet, Extinguishing powder, Carbon dioxide (CO₂) to extinguish.
 Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.

Hazards not otherwise classified

No information available.

3. Composition/information on ingredients

Mixtures

Hazardous components

CAS No	Components	Quantity
78-93-3	butanone; ethyl methyl ketone	65 %
108-65-6	2-methoxy-1-methylethyl acetate	7.5 %
28182-81-2	Hexamethylene diisocyanate, oligomers	7.5 %
1333-86-4	Carbon Black	5 %
123-86-4	n-butyl acetate	1.5 %
1330-20-7	xylene	1.5 %
100-41-4	ethylbenzene	0.9 %
9016-87-9	Diphenylmethanediisocyanate, isomers and homologues	0.9 %

4. First-aid measures

Description of first aid measures

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General information

Change contaminated clothing.

After inhalation

Provide fresh air. Medical treatment necessary. If unconscious place in recovery position and seek medical advice.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

After ingestion

Call a physician immediately.

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

Carbon dioxide (CO₂), Extinguishing powder. Water spray jet
In case of major fire and large quantities: Water spray jet, alcohol resistant foam.

Unsuitable extinguishing media

High power water jet.

Specific hazards arising from the chemical

No further relevant information available.

Special protective equipment and precautions for fire-fighters

No special measures are necessary.

Additional information

Use water spray/stream to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures****General measures**

Do not breathe gas/fume/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

For emergency responders

For further specification, refer to section 8 of the SDS.

Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up**For containment**

Prevent spread over a wide area (e.g. by containment or oil barriers).
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Treat the recovered material as prescribed in the section on waste disposal.

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Other information

Provide adequate ventilation. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Reference to other sections

Safe handling: see section 7

Personal protection equipment (PPE): see section 8

Disposal: see section 13

7. Handling and storage**Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid: generation/formation of aerosols Do not breathe gas/fume/vapour/spray.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed.

Provide adequate ventilation as well as local exhaustion at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

No special measures are necessary.

Further information on storage conditions

maximum storage temperature: < 40°C

minimum storage temperature: > 4°C

storage temperature: 4 - 40°C

8. Exposure controls/personal protection**Control parameters**

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Exposure limits

CAS No.	Substance	ppm	mg/m ³	f/cc	Category	Origin
78-93-3	2-Butanone (Methyl ethyl ketone)	200	590		TWA (8 h)	PEL
78-93-3	2-Butanone	200	590		TWA (8 h)	REL
		300	885		STEL (15 min)	REL
1333-86-4	Carbon black (in presence of polycyclic aromatic hydrocarbons (PAHs)) (as PAHs)	-	0.1		TWA (8 h)	REL
1333-86-4	Carbon black	-	3.5		TWA (8 h)	PEL
100-41-4	Ethyl benzene	100	435		TWA (8 h)	PEL
		100	435		TWA (8 h)	REL
		125	545		STEL (15 min)	REL
123-86-4	n-Butyl acetate	150	710		TWA (8 h)	REL
		200	950		STEL (15 min)	REL
123-86-4	n-Butyl-acetate	150	710		TWA (8 h)	PEL
1330-20-7	Xylenes (o-,m-,p-isomers)	100	435		TWA (8 h)	PEL

Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fume/vapour/spray.

Individual protection measures, such as personal protective equipment
Eye/face protection

Eye glasses with side protection (DIN EN 166)

Hand protection

Tested protective gloves must be worn (EN ISO 374): Butyl caoutchouc (butyl rubber)

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Protective gloves have to be replaced at the first sign of deterioration.

Breakthrough times and swelling properties of the material must be taken into consideration.

Skin protection

. Wear anti-static footwear and clothing

Respiratory protection

Work in well-ventilated zones or use proper respiratory protection. gas filtering equipment (EN 141), Filter material/medium: A

9. Physical and chemical properties
Information on basic physical and chemical properties

Physical state:	Liquid
Color:	black
Odor:	characteristic

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Odour threshold: not determined

Changes in the physical state

Melting point/freezing point: not determined

Boiling point or initial boiling point and boiling range: 79 °C

Flash point: -4 °C

Flammability

Solid/liquid: not applicable

Gas: not applicable

Explosive properties

The product is: not explosive. In use, may form flammable/explosive vapor-air mixture.

Lower explosion limits: not determined

Upper explosion limits: not determined

Auto-ignition temperature: > 300 °C

Self-ignition temperature

Solid: not applicable

Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties

not determined

pH-Value: not determined

Viscosity / dynamic: not determined

Viscosity / kinematic: not determined

Water solubility: Immiscible

Solubility in other solvents

not determined

Partition coefficient n-octanol/water: not determined

 Density (at 20 °C): 0,92 g/cm³

Relative vapour density: not determined

Other information
Other safety characteristics

Solvent content: 72,3 %

Evaporation rate: not determined

Further Information

No information available.

10. Stability and reactivity
Reactivity

No further relevant information available.

Chemical stability

Stability: Stable

No hazardous reaction when handled and stored according to provisions.

Possibility of hazardous reactions

Hazardous reactions: Will not occur

No known hazardous reactions.

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Conditions to avoid

No further relevant information available.

Incompatible materials

No further relevant information available.

Hazardous decomposition products

No known hazardous decomposition products.

11. Toxicological information**Information on toxicological effects****Acute toxicity**

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

ATEmix tested

	Dose	Species	Source
LD50, dermal	150638 mg/kg	Rabbit	
LC50, inhalation (vapor) (4 h)	129 mg/l		

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CAS No	Components				
	Exposure route	Dose	Species	Source	Method
78-93-3	butanone; ethyl methyl ketone				
	oral	LD50 mg/kg	3300	Rat	
	dermal	LD50 mg/kg	5000	Rabbit	
	inhalation (4 h) vapour	LC50	12 mg/l	Rat	
108-65-6	2-methoxy-1-methylethyl acetate				
	oral	LD50 mg/kg	8530	Rat	
	inhalation (4 h) vapour	LC50	34,7 mg/l	Rat	
28182-81-2	Hexamethylene diisocyanate, oligomers				
	oral	LD50 mg/kg	>5000	Rat	
	inhalation (4 h) vapour	LC50	11 mg/l		
	inhalation aerosol	ATE	1,5 mg/l		
1333-86-4	Carbon Black				
	oral	LD50 mg/kg	> 15400	Rat	GESTIS
	dermal	LD50 mg/kg	> 3000	Rabbit	GESTIS
123-86-4	n-butyl acetate				
	oral	LD50 mg/kg	10760	Rat	
	dermal	LD50 mg/kg	14112	Rabbit	
	inhalation (4 h) aerosol	LC50	23,4 mg/l	Rat	
1330-20-7	xylene				
	dermal	ATE mg/kg	1100		
	inhalation vapour	ATE	11 mg/l		
	inhalation aerosol	ATE	1,5 mg/l		
100-41-4	ethylbenzene				
	oral	LD50 mg/kg	3500	Rat	GESTIS
	dermal	LD50 mg/kg	15400	Rabbit	GESTIS
	inhalation (4 h) vapour	LC50	17,2 mg/l	Rat	
	inhalation aerosol	ATE	1,5 mg/l		
9016-87-9	Diphenylmethanediisocyanate, isomers and homologues				
	oral	LD50 mg/kg	>10000	Rat	
	dermal	LD50 mg/kg	>9400	Rabbit	
	inhalation vapour	ATE	11 mg/l		
	inhalation aerosol	ATE	1,5 mg/l		

Irritation and corrosivity

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Causes serious eye irritation

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

Sensitizing effects

May cause allergy or asthma symptoms or breathing difficulties if inhaled (Diphenylmethanediisocyanate, isomers and homologues)

May cause an allergic skin reaction (Hexamethylene diisocyanate, oligomers; Diphenylmethanediisocyanate, isomers and homologues)

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing cancer (Carbon Black; ethylbenzene; Diphenylmethanediisocyanate, isomers and homologues)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

Specific target organ toxicity (STOT) - single exposure

May cause drowsiness or dizziness (butanone; ethyl methyl ketone)

Specific target organ toxicity (STOT) - repeated exposure

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

Carcinogenicity (IARC):

Carbon black (CAS 1333-86-4) is listed in group 2B. Xylenes (CAS 1330-20-7) is listed in group 3. Ethylbenzene (CAS 100-41-4) is listed in group 2B. Polymethylene polyphenyl isocyanate (CAS 9016-87-9) is listed in group 3.

Aspiration hazard

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

Further information

There are no data available on the preparation/mixture itself.

12. Ecological information

Ecotoxicity

No further relevant information available.

Persistence and degradability

No further relevant information available.

Bioaccumulative potential

No further relevant information available.

Mobility in soil

No further relevant information available.

Other adverse effects

No further relevant information available.

Further information

There are no data available on the preparation/mixture itself.

Do not allow to enter into surface water or drains.

13. Disposal considerations

Waste treatment methods

Disposal recommendations

Dispose of waste according to applicable legislation. Do not mix with other wastes.

List of proposed waste codes/waste designations in accordance with EWC:

RCRA Hazardous wastes (Resource Conservation and Recovery Act)

None

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself. Remove according to the regulations.

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14. Transport information
US DOT 49 CFR 172.101

UN/ID number: UN 1866
Proper shipping name: Resin solution
Transport hazard class(es): 3
Packing group: II
 Hazard label: 3


Marine transport (IMDG)

UN number: UN 1866
UN proper shipping name: RESIN SOLUTION
Transport hazard class(es): 3
Packing group: II
 Hazard label: 3



Marine pollutant: no
 Special Provisions: -
 Limited quantity: 5 L
 Excepted quantity: E2
 EmS: F-E, S-E

Air transport (ICAO-TI/IATA-DGR)

UN number: UN 1866
UN proper shipping name: RESIN SOLUTION
Transport hazard class(es): 3
Packing group: II
 Hazard label: 3



Special Provisions: A3
 Limited quantity Passenger: 1 L
 Passenger LQ: Y341
 Excepted quantity: E2
 IATA-packing instructions - Passenger: 353
 IATA-max. quantity - Passenger: 5 L
 IATA-packing instructions - Cargo: 364
 IATA-max. quantity - Cargo: 60 L

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Special precautions for user

No information available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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not applicable

15. Regulatory information
U.S. Regulations
National Inventory TSCA

Substance/product listed in the following inventories: TSCA

National regulatory information

SARA Section 304 CERCLA:

Methyl ethyl ketone (78-93-3): Reportable quantity = 5,000 (2270) lbs. (kg)

Butyl acetate (123-86-4): Reportable quantity = 5,000 (2270) lbs. (kg)

Xylene (mixed isomers) (1330-20-7): Reportable quantity = 100 (45.4) lbs. (kg)

Ethylbenzene (100-41-4): Reportable quantity = 1,000 (454) lbs. (kg)

SARA Section 311/312 Hazards:

Methyl ethyl ketone (78-93-3): Fire hazard, Immediate (acute) health hazard

2-methoxy-1-methylethyl acetate (108-65-6): Fire hazard

Hexamethylene diisocyanate, oligomers (28182-81-2): Immediate (acute) health hazard

Carbon Black (1333-86-4): Delayed (chronic) health hazard

Butyl acetate (123-86-4): Fire hazard, Immediate (acute) health hazard

Xylene (mixed isomers) (1330-20-7): Fire hazard, Immediate (acute) health hazard

Ethylbenzene (100-41-4): Fire hazard, Delayed (chronic) health hazard, Immediate (acute) health hazard

Polymeric diphenylmethane diisocyanate (9016-87-9): Delayed (chronic) health hazard, Immediate (acute) health hazard

SARA Section 313 Toxic release inventory:

Xylene (mixed isomers) (1330-20-7): De minimis limit = 1.0 %, Reportable threshold = Standard

Ethylbenzene (100-41-4): De minimis limit = 0.1 %, Reportable threshold = Standard

Polymeric diphenylmethane diisocyanate (9016-87-9): De minimis limit = 1.0 %, Reportable threshold = Standard

Clean Air Act Section 112(b):

Methyl ethyl ketone (78-93-3), Xylene (mixed isomers) (1330-20-7), Ethylbenzene (100-41-4)

State Regulations
Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

 WARNING: This product can expose you to chemicals including Carbon black (airborne, unbound particles of respirable size) (cancer); Ethylbenzene (cancer), which are known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Additional information

This mixture contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: none/none

16. Other information
Hazardous Materials Information Label (HMIS)

Health: 2

Flammability: 3

Physical Hazard: 0

NFPA Hazard Ratings

Health: 2

Flammability: 3

Reactivity: 0

Unique Hazard: none/none


Changes

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Revision No: 1,1

This data sheet contains changes from the previous version in section(s): 3,8,11,15.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Other data

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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)