

# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## DINITROL 538 PLUS

Revision date: 01/11/2022

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: 8500 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 (CO<sub>2</sub>) 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, isomeres 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 but breathing normally, 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 (CO<sub>2</sub>), 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/vapors/mists with water spray jet.

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

Do not breathe gas/fume/vapor/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 (sand, diatomaceous earth, acid- or universal binding agents).  
Treat the recovered material as prescribed in the section on waste disposal.

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**For cleaning up**

Provide adequate ventilation.  
Clear contaminated areas thoroughly.  
Do not rinse down with water.

**Other information**

Provide adequate ventilation. Absorb with liquid-binding material (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/vapor/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 <sup>3</sup>	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/vapor/spray.

#### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Eye glasses with side protection (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

Softening point: not determined

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

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

Vapor pressure: not determined

Density (at 20 °C): 0,92 g/cm³

Relative vapour density: not determined

Particle characteristics: not applicable

### Other information

#### Information with regard to physical hazard classes

Oxidizing properties

not determined

#### 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

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No hazardous reaction when handled and stored according to provisions.

**Possibility of hazardous reactions**

Hazardous reactions:

Will not occur

No known hazardous reactions.

**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 8500	Rat		
	inhalation (4 h) vapour	LC50 35,7 mg/l	Rat		
28182-81-2	Hexamethylene diisocyanate, oligomers				
	oral	LD50 mg/kg >5000	Rat		
	inhalation (4 h) vapour	LC50 11 mg/l			
	inhalation dust/mist	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 8800	Rat		
	dermal	LD50 mg/kg > 5000	Rabbit		
	inhalation (4 h) dust/mist	LC50 >21 mg/l	Rat		
1330-20-7	xylene				
	dermal	ATE mg/kg 1100			
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	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 dust/mist	ATE 1,5 mg/l			
9016-87-9	Diphenylmethanediisocyanate, isomeres and homologues				
	oral	LD50 mg/kg >10000	Rat		
	dermal	LD50 mg/kg >9400	Rabbit		
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			



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**Irritation and corrosivity**

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, isomeres and homologues)

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

Suspected of causing cancer (Carbon Black; ethylbenzene; Diphenylmethanediisocyanate, isomeres 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.

**Information on other hazards****Endocrine disrupting properties**

Endocrine disrupting potential No information available.

**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.

**Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**Other adverse effects**

No further relevant information available.

**Further information**

There are no data available on the mixture itself.

**13. Disposal considerations****Waste treatment methods****Disposal recommendations**

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

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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.

## 14. Transport information

### U.S. DOT 49 CFR 172.101

**UN number or 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 or ID 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 or ID 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

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### Special precautions for user

No information available.

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

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](http://www.P65Warnings.ca.gov).

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

## 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



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**Changes**

Revision date: 11.01.2022

Revision No: 1,1

This data sheet contains changes from the previous version in section(s): 2,11,15.

**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.

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