

**SAFETY DATA SHEET****FORMI® NDF**

Formi® NDF contains sodium formate and formic acid

**1. Identification of the substance / preparation and company / undertaking**

<b>Product name</b>	Formi® NDF		
<b>Chemical product name</b>	Preparation of sodium formate and formic acid		
<b>Synonyms</b>	Sodium diformate		
<b>Supplier</b>	ADDCON GmbH Kaiserstraße 1 D-53113 Bonn Germany	Phone: +49-228-91910-0 Fax: +49-228-91910-60 <a href="mailto:info@addcon.com">info@addcon.com</a> <a href="http://www.addcon.com">www.addcon.com</a>	
<b>Emergency Telephone number</b>	+49 (0) 3493 899899-5 (office time: Mo – Fr, 8.00a.m. – 5.00p.m.)		
<b>e-mail-address of person responsible for this SDS</b>	<a href="mailto:thomas.ohlmann@addcon.com">thomas.ohlmann@addcon.com</a>		
<b>Recommended use</b>	Preservative, feed additive		

**2. Hazards identification**

The preparation is classified as dangerous according to directive 67/548/EEC and its amendments.

<b>Classification</b>	Xi, irritating
<b>Human health hazards</b>	Risk for serious damage to eyes.
<b>Environmental hazards</b>	Based on the available data of this product no hazardous properties are known.
<b>Physical / chemical hazards</b>	Based on the available data of this product no hazardous properties are known.

**3. Composition / information on ingredients**

Substance / preparation : preparation

Chemical name	CAS no.	%	EC- no. *	classification
Sodium formate See section 16 for the full text of the R-phrases declared above.	141-53-7	56	205-488-0	
Formic acid See section 16 for the full text of the R-phrases declared above.	64-18-6	38	200-579-1	C, R 35

\* EC-No. means EINECS- or ELINCS-number.

**4. First-aid measures****Effects and symptoms**

<b>Inhalation</b>	Over-exposure by inhalation (dust) may cause respiratory irritation (coughing).
<b>Ingestion</b>	Ingestion of the product may cause irritation and discomfort.
<b>Skin contact</b>	There is no known acute effect after over-exposure to this product.
<b>Eye contact</b>	Risk for serious damage to eyes.
<b>First-aid measures</b>	
<b>General</b>	Move exposed person to fresh air. Remove contaminated clothing.
<b>Inhalation</b>	If inhaled, remove to fresh air. Obtain medical attention if symptoms occur.
<b>Ingestion</b>	If swallowed, rinsed mouth with water (only if the person is conscious). Obtain medical attention if symptoms occur.
<b>Skin contact</b>	Rinse with plenty of running water. Remove contaminated clothes and shoes. Obtain medical attention if symptoms occur.
<b>Eye contact</b>	Rinse immediately with plenty of running water. Consult medical attention for eyes immediately.
<b>First-aid facilities:</b>	No special recommendations.

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

<b>Small fire suitable</b>	Use dry chemical or CO <sub>2</sub> .
<b>Large fire suitable</b>	Use water, foam or dry chemical powder-
<b>Unusual fire / explosion hazards</b>	Based on the available data of this product no hazardous properties are known.

## 5. Fire-fighting measures

<b>Hazardous thermal decomposition products</b>	In case of fire, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, sodium oxide.
<b>Special fire-fighting procedures</b>	No special measures required.
<b>Protection of fire-fighters</b>	Wear suitable protective clothing. Self-contained breathing apparatus.

## 6. Accidental release measures

<b>Personal precautions</b>	Ensure good ventilation. Avoid formation of dust and inhalation of dust. See protective measures under point 7 and 8.
<b>Environmental precautions</b>	Do not allow to enter drains/surface water/ground-water.
<b>Clean-up methods</b>	
<b>Small spill and leak</b>	Wash with plenty of water.
<b>Large spill and leak</b>	Collect spill in suitable containers by mechanical means. Avoid dust formation.

**Note:** See section 8 for personal protective equipment and section 13 for waste disposal.

## 7. Handling and storage

<b>Handling</b>	Use with adequate ventilation. No special technical protective measures are necessary.
<b>Storage</b>	Store in a dry, cool and well-ventilated area (due to limited adsorption properties). The product has been produced and packaged in accordance with strict quality practices. Maintain this quality level by storing this product away from other chemicals.
<b>Remarks</b>	The product should be handled with the care usual when dealing with chemicals.
<b>Packaging materials</b>	
<b>Suitable</b>	Polyethylene or Material, chemical-resistant.

**Note:** See section 10 for stability and reactivity.

## 8. Exposure controls / personal protection

<b>Engineering measures</b>	See section 7. No additional measures necessary.
<b>Hygiene measures</b>	When using does not eat, drink or smoke. Wash hands after handling compounds and before eating, smoking and using the lavatory at the end of the day.
<b>Personal protective equipment – Production scale</b>	
<b>Respiratory system</b>	Breathing protection if breathable aerosols/dust is formed. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2).
<b>Skin and body</b>	Working clothes
<b>Eyes</b>	Safety glasses with side shields.
<b>Hands</b>	Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact and other. Supplementary note: The specifications are based on own tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the determined permeation time.
<b>Recommended material(s)</b>	> 8 hours (breakthrough time): Nitril rubber, butyl rubber, neoprene, Viton, PVC. Replace damaged gloves.

**Advice on personal protection is applicable for high exposure levels. Select proper personal protection based on a risk assessment of the actual situation.**

## 9. Physical and chemical properties

<b>Physical state</b>	Powder, crystalline
<b>Colour</b>	white to white-yellow
<b>Odour</b>	faint odour of formic acid
<b>pH</b>	3.0 – 4.0 (concentration 10%)
<b>Boiling point</b>	Not available.
<b>Melting point</b>	> 80 °C (partially decomposition)
<b>Flash point</b>	Not available.
<b>Lower explosion limit</b>	Product is not explosive.

## 9. Physical and chemical properties

Auto-ignition temperature	> 150 °C (Wire basket)
Density ( g/cm <sup>3</sup> )	Not available.
Bulk density	0.8 – 1.0 g/cm <sup>3</sup>
Solubility in water	soluble
Solubility	Easy soluble in the following materials: cold water. Partially soluble in the following materials: methanol.
Molecular weight	Not available
Minimum ignition energy	Not available.
Dust explosion class	Not available.
Remarks	More detailed information on the physical and chemical properties can be requested from the supplier.

## 10. Stability and reactivity

Stability	Stable under recommended storage and handling conditions (see section 7).
Conditions to avoid	Exposure to sources of heat, sources of ignition, open flame.
Materials to avoid	Oxidizing substances, inorganic acids
Hazardous decomposition products	In case of fire: see section 5.

## 11. Toxicological information

### Potential acute health effects

Inhalation	Over-exposure by inhalation (dust) may cause respiratory irritation (coughing).
Ingestion	Ingestion of the product may cause irritation and discomfort.
Skin contact	There is no known acute effect after over-exposure to this product.
Eye contact	Risk for serious damage to eyes.

### Acute toxicity

Product / ingredient name	Result	Species	Dose	Exposure
Sodium diformate	LD50 oral	rat	> 2000 mg/kg	-
	LD50 dermal	rat	> 5.15 mg/l	4 hours

### Primary irritation

Product / ingredient name	Test	Species	Evaluation	Method
Sodium diformate	Skin	Rabbit	not irritant	EEC 84/449, B4
	Eye	Rabbit	irritant	EEC 84/449, B5

**Sensitization** No sensitizing effect admits. [OECD Guideline 406]

### Potential chronic health effects

<b>Chronic effects</b>	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	The substance was not mutagenic in bacteria.
<b>Teratogenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.
<b>Chronic toxicity</b>	No specific data.
<b>Carcinogenicity</b>	No specific data.
<b>Mutagenicity</b>	No mutagenic effect was found in various tests with mammalian cell culture and mammals.

Product / ingredient name	Test	Experiment	Result
Sodium diformate	Ames-Test	In vitro; Bacteria	Negative

**Teratogenicity** No specific data.

**Reproductive toxicity** The results of animals studies gave no indication of a fertility impairing effect

**Conclusion / summary** No indications for carcinogenicity. No indications for reproduction toxicity. The product has not been tested. The statement has derived from products of similar structure and composition.

## 12. Ecological information

**Environmental effects** Readily biodegradable. This product shows a low bioaccumulation potential.

### Aquatic ecotoxicity

Product / ingredient name	Test	Result	Species	Exposure
Sodium diformate	Mortality	Acute LC50 3500 mg/l	Fish	96 hours
	Mortality	Acute EC50 540 mg/l	Daphnia	48 hours
	Mortality	Acute LC50 >1000 mg/l	Algae	72 hours

**Persistence / degradability** Readily biodegradable (according to OECD criteria).  
Elimination information:  
Test method: OECD 301D; EEC 92/69, C.4-E (aerobic), activated sludge, domestic.  
Method of analysis: BOD of the ThOD.  
Degree of elimination: >90 % (28 d).

**Other adverse effects** No known significant effects or critical hazards.

**AOX** The product does not contain organically bound halogens which could lead to an AOX (Absorbable Organically bound Halogens) value in waste water.

**Mobility** Dissolves readily in water.

## 13. Disposal considerations

**Methods of disposal (waste of residues; contaminated packaging)** Waste must be disposed of in accordance with national and local environmental regulations. Controlled biodegradation in waste water treatment is possible.

## 14. Transport information

### International transport regulations

Regulatory information	UN - Number	Proper shipping name	class	PG*	Label	Additional information
<b>ADR/RID Class</b>	Not regulated.	-	-	-	-	-
<b>ADNR Class</b>	Not regulated	-	-	-	-	-
<b>IMDG Class</b>	Not regulated	-	-	-	-	-
<b>IATA Class</b>	Not regulated	-	-	-	-	-

PG\* : Packing group

## 15. Regulatory information

According to EU directives 67/548/EEC and 1999/45/EC this product does to labelling as

### EC-regulations



**Xi, irritant**

### Risk phrases

R41 – risk of serious damage to eyes  
S22 – do not breathe dust  
S25 – avoid contact with eyes

### Safety phrases

S26 – in case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
S39 – wear eye/face protection

### Remarks

## 16. Other information

**Full text of R phrases referred to in sections 2 and 3 – United Kingdom (UK)** R35 – causes severe burns

**Full text of classifications referred to in sections 2 and 3 – United Kingdom (UK)** C - corrosive

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**Internal code** SDB\_NDF\_E\_0003

## 16. Other information

### History

<b>Date of printing</b>	18.10.2013
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<b>Version</b>	6

### Notice to reader

The information contained in the Safety Data Sheet is based on our data available on the data of publication. The information is intended to aid the user in controlling the handling risks; it is not to be construed as a warranty or specification of the product quality. The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications.

The user is responsible for ensuring that appropriate precautions are taken and for satisfying them that the data are suitable and sufficient for the product's intended purpose. In case of any unclarity we advise consulting the supplier or an expert.

**Training advice** Handling of this substance or preparation is restricted to skilled personal only.

**Source of key data** Literature data and/or investigation reports are available through the manufacturer.

**Alterations compared to the previous version** Alterations compared to the previous version are marked with a little (blue) triangle.