

**SAFETY DATA SHEET****FORMI® GML**

Formi® GML contains organic acids

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

<b>Product name</b>	Formi® GML		
<b>Chemical product name</b>	Preparation of sodium formate and organic acids		
<b>Synonyms</b>			
<b>Supplier</b>	ADDCON GmbH Parsevalstr. 6, Areal D D-06749 Bitterfeld-Wolfen (Germany)	[P] +49-228-91910-0 [F] +49-228-91910-60 [E] <a href="mailto:info@addcon.com">info@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:gm@addcon.com">gm@addcon.com</a>		
<b>Recommended use</b>	Premixture of preservatives, feed additive		

**2. Hazards identification**

<b>Classification</b>	GEFAHR		serious Eye damage Cat. 1
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**Human health hazards**

<b>H-statements</b>	H318	Causes serious eye damage.
<b>P-statements</b>	P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
	P280	Wear protective gloves / protective clothing / eye protection.
	P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P314	Get medical advice / attention if you feel unwell.

**Environmental hazards** Based on the available data of this product no hazardous properties are known.

**Physical / chemical hazards** Product tips under the influence of moisture and strong acids to the decomposition, can unleash formic acid. May be metal corrosive then be wet.

**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	40 – 50	205-488-0	Not classified.
Formic acid See section 16 for the full text of the R-phrases declared above.	64-18-6	25 – 35	200-579-1	GHS02/GHS05/GHS06 H226/H331/H301/H314/EUH071

\* 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>	Irritating by over-exposure on skin.
<b>Eye contact</b>	Irritant. 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.

#### 4. First-aid measures

Eye contact	Rinse immediately with plenty of running water. Consult medical attention for eyes immediately.
First-aid facilities:	No special recommendations.

#### 5. Fire-fighting measures

<b>Extinguishing media</b>	
Small fire suitable	Use dry chemical or CO <sub>2</sub> .
Large fire suitable	Use water, foam or dry chemical powder-
Unusual fire / explosion hazards	Based on the available data of this product no hazardous properties are known.
Hazardous thermal decomposition products	In case of fire, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, sodium oxide.
Special fire-fighting procedures	No special measures required.
Protection of fire-fighters	Wear suitable protective clothing. Self-contained breathing apparatus.

#### 6. Accidental release measures

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

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

#### 7. Handling and storage

Handling	Use with adequate ventilation. Local exhaust ventilation should be provided. Avoid creating dusty conditions and prevent wind dispersal.
Storage	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.
Remarks	The product should be handled with the care usual when dealing with chemicals.
<b>Packaging materials</b>	
Suitable	Polyethylene or Material, chemical-resistant.

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

#### 8. Exposure controls / personal protection

Engineering measures	See section 7. No additional measures necessary.
Hygiene measures	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>	
Respiratory system	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).
Skin and body	Working clothes
Eyes	Safety glasses with side shields.
Hands	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.
Recommended material(s)	> 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
<b>pH</b>	2.5 – 3.5 (concentration 10%)
<b>Boiling point</b>	Not available.
<b>Melting point</b>	> 80 °C (partially decomposition)
<b>Auto-ignition temperature</b>	> 150 °C (Wire basket)
<b>Density ( g/cm<sup>3</sup> )</b>	Not available.
<b>Bulk density</b>	0.6 – 0.8 g/cm <sup>3</sup>
<b>Solubility in water</b>	55 g/100ml (20°C)
<b>Solubility</b>	Easy soluble in the following materials: cold water. Partially soluble in the following materials: methanol.
<b>Remarks</b>	More detailed information on the physical and chemical properties can be requested from the supplier.

## 10. Stability and reactivity

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

## 11. Toxicological information

### Potential acute health effects

<b>Inhalation</b>	Dust may irritate respiratory tract and lungs.
<b>Ingestion</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Eye contact</b>	Risk of 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
Formic acid	LD50 oral	rat	730 mg/kg	-
	LD50 inhalation	rat	7,4 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
Formic acid	Skin	Rabbit	corrosive	EEC 84/449, B4

**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.

**Chronic toxicity** No specific data.

## 11. Toxicological information

**Carcinogenicity** No specific data.

**Mutagenicity** 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
Formic acid	Mortality	Acute LC50 >46 - <100 mg/l	Fish	96 hours
	Mortality	Acute LC50 32.19 mg/l	Daphnia	48 hours
	Mortality	Acute EC50 26.9 mg/l	Water plants	72 hours

Readily biodegradable (according to OECD criteria).

Elimination information:

**Persistence / degradability** Test method: OECD 301D; EEC 92/69, C.4-E (aerobic), activated sludge, domestic.  
Method of analysis: BOD of the ThOD.  
Degree of elimination: >72 % (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

### EC-regulations

**Remarks** The classification takes place due to of available data of products similar structure or composition.

## 16. Other information

**Full text of R phrases referred to in sections 2 and 3 – United Kingdom (UK)** H226/H331/H301/H314/EUH071  
 H226 – Flammable liquid and vapour.  
 H331 – Toxic if inhaled.  
 H301 – Toxic if swallowed.  
 H314 – Causes severe skin burns and eye damage.  
 EUH071 – Corrosive to the respiratory tract.

**Full text of classifications referred to in sections 2 and 3 – United Kingdom (UK)** GHS02 – Flame  
 GHS05 – Corrosion  
 GHS06 – Skull and crossbones

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 Tel.: +49 (0) 3493 899899 5

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### 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.