

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 16.02.2016

Version number 4

Revision: 16.02.2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** 809-A Eurocolor Game Line Duo - Härter
- **Article number:** 75992
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture**
Polyurethane lacquer
Hardening agent/ Curing agent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
FORBO Eurocol Deutschland GmbH
August-Roebling-Str. 2
D-99091 Erfurt
Tel.: +49 (0)361 73041-0
Fax: +49 (0)361 73041-92
Website: <http://www.forbo-bonding.de>
- **Further information obtainable from:**
Laboratory
Ronny Dorna
Ronny.Dorna@forbo.com
- **1.4 Emergency telephone number:**
GGIZ +49-361-730730 (for Germany)
GÖG +43 1 406 43 43 (für Österreich)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08 health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

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- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02 GHS07 GHS08

- **Signal word** Warning
- **Hazard-determining components of labelling:**
Hexamethylene-1,6- diisocyanate, homopolymer
xylene
hexamethylene diisocyanate
- **Hazard statements**
H226 Flammable liquid and vapour.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
- **Additional information:**
Safety data sheet available on request.
Restricted to professional users.
EUH204 Contains isocyanates. May produce an allergic reaction.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

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· Dangerous components:

CAS: 28182-81-2 NLP: 500-060-2	Hexamethylene-1,6- diisocyanate, homopolymer ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50-75%
CAS: 1330-20-7 EINECS: 215-535-7 Index number: 601-022-00-9 Reg.nr.: 01-2119486136-34-XXXX	xylene ⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315	10-<20%
CAS: 108-65-6 EINECS: 203-603-9 Index number: 607-195-00-7	2-methoxy-1-methylethyl acetate ⚠ Flam. Liq. 3, H226	10-<20%
CAS: 822-06-0 EINECS: 212-485-8 Index number: 615-011-00-1	hexamethylene diisocyanate ⚠ Acute Tox. 3, H331; ⚠ Resp. Sens. 1, H334; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	≤0.1%

· Additional information: For the wording of the listed risk phrases refer to section 16.**SECTION 4: First aid measures****· 4.1 Description of first aid measures****· General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

Supply fresh air and to be sure call for a doctor.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.**· After swallowing:** Call for a doctor immediately.**· 4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.**· 4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

SECTION 5: Firefighting measures**· 5.1 Extinguishing media****· Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water.**· For safety reasons unsuitable extinguishing agents:** Water with full jet**· 5.2 Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NO_x)

Hydrogen cyanide (HCN)

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- **5.3 Advice for firefighters**
- **Protective equipment:**
 - Wear fully protective suit.
 - Do not inhale explosion gases or combustion gases.
 - Wear self-contained respiratory protective device.
 - Mouth respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Keep away from ignition sources.
 - Wear protective equipment. Keep unprotected persons away.
 - Ensure adequate ventilation
- **6.2 Environmental precautions:**
 - Do not allow to enter drains/ surface or ground water.
 - Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
 - Ensure adequate ventilation.
 - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
 - Dispose contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - Avoid contact with skin and eyes.
 - Keep receptacles tightly sealed.
 - Ensure good ventilation/exhaustion at the workplace.
 - Prevent formation of aerosols.
- **Information about fire - and explosion protection:**



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
 - Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
 - Information about storage in one common storage facility:** Not required.
 - Further information about storage conditions:**
 - Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.
 - Keep container tightly sealed.
 - Store in cool, dry conditions in well sealed receptacles.
 - Protect from humidity and water.
- **Recommended storage temperature:** +5 °C - +30 °C
- **Storage class:** 3 Flammable liquids. (VCI)

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· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

1330-20-7 xylene

WEL	Short-term value: 441 mg/m ³ , 100 ppm Long-term value: 220 mg/m ³ , 50 ppm Sk; BMGV
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108-65-6 2-methoxy-1-methylethyl acetate

WEL	Short-term value: 548 mg/m ³ , 100 ppm Long-term value: 274 mg/m ³ , 50 ppm Sk
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822-06-0 hexamethylene diisocyanate

WEL	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO
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· DNELs

28182-81-2 Hexamethylene-1,6- diisocyanate, homopolymer

Inhalative	NOEL	4.3 mg/m ³ (rat) (OECD 412 (subacute inhalation toxicity))
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· Ingredients with biological limit values:

1330-20-7 xylene

BMGV	650 mmol/mol creatinine Medium: urine Sampling time: post shift Parameter: methyl hippuric acid
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· Additional information: The lists valid during the making were used as basis.

· 8.2 Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· Respiratory protection:



In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· Recommended filter device for short term use: Combination filter A2-P2

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· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Butyl rubber, BR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact gloves made of the following materials are suitable:**

Butyl rubber, BR

Recommended thickness of the material: ≥ 0.5 mm.· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**· **General Information**· **Appearance:**

Form:	Fluid
Colour:	Yellow tint
Odour:	Solvent-like

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

· **Flash point:** 27 °C

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** Undetermined.

· **Decomposition temperature:** Undetermined.

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· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Explosion limits:	
Lower:	1.1 Vol %
Upper:	7.0 Vol %
· Vapour pressure at 20 °C:	6.7 hPa
· Density at 20 °C:	1.08 g/cm ³
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Undetermined.
· Viscosity:	
Dynamic at 20 °C:	70 mPas
· Solvent content:	
Organic solvents:	26.0 %
VOC (CE)	14.00 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with alcohols, amines, aqueous acids and alkalis.
Danger of receptacles bursting because of high vapour pressure when heated.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if inhaled.

· **LD/LC50 values relevant for classification:**

28182-81-2 Hexamethylene-1,6- diisocyanate, homopolymer

Oral	LD50	≥5000 mg/kg (rat) (OECD 423)
Inhalative	LC50/4h	543 mg/l (rat) (OECD 403)

1330-20-7 xylene

Oral	LD50	2840 mg/kg (rat)
Dermal	LD50	>4350 mg/kg (rabbit)

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Inhalative	LC50/4h	28 mg/l (rat)
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· Primary irritant effect:
· Skin corrosion/irritation
28182-81-2 Hexamethylene-1,6- diisocyanate, homopolymer

Irritation of skin	Dermal Irritation	slightly irrit. (rabbit) (OECD 404)
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Causes skin irritation.

· Serious eye damage/irritation
28182-81-2 Hexamethylene-1,6- diisocyanate, homopolymer

Irritation of eyes	Eye Irritation	slightly irrit. (rabbit) (OECD 405)
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Causes serious eye irritation.

· Respiratory or skin sensitisation
28182-81-2 Hexamethylene-1,6- diisocyanate, homopolymer

Sensitisation	Skin Sens. (LLNA)	sensitizing (mouse) (OECD 429 (Skin Sensitisation: Local Lymph Node Ass))
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May cause an allergic skin reaction.

· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
· Germ cell mutagenicity Based on available data, the classification criteria are not met.

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

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

· STOT-single exposure

May cause respiratory irritation.

· STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

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

SECTION 12: Ecological information

· 12.1 Toxicity
· Aquatic toxicity:
28182-81-2 Hexamethylene-1,6- diisocyanate, homopolymer

LC50/96h	28.3 mg/l (Danio rerio) (OECD 203)
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EC50/48h	>100 mg/l (Daphnia magna) (OECD 202)
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EC50/72h	>100 mg/l (Scenedesmus suspicatus) (OECD 201)
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1330-20-7 xylene

EC50/24h	165 mg/l (Daphnia magna)
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LC50/96h	14 mg/l (Onchorhynchus mykiss)
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LC50/48h	86 mg/l (Leuciscus idus)
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· 12.2 Persistence and degradability No further relevant information available.

· Degree of elimination:
28182-81-2 Hexamethylene-1,6- diisocyanate, homopolymer

Biodegradability	2 % / 28d (activated sludge) (OECD 301 D)
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· 12.3 Bioaccumulative potential No further relevant information available.

· 12.4 Mobility in soil No further relevant information available.

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- **Ecotoxicological effects:**
- **Behaviour in sewage processing plants:**

Type of test	Effective concentration	Method	Assessment
28182-81-2 Hexamethylene-1,6- diisocyanate, homopolymer			
EC50/3h	>10000 mg/l (activated sludge) (OECD 209)		

- **Additional ecological information:**

- **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- **European waste catalogue**

08 01 11*	waste paint and varnish containing organic solvents or other dangerous substances
08 05 01*	waste isocyanates

- **Uncleaned packaging:**

- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**

- **ADR, IMDG, IATA**

UN1263

- **14.2 UN proper shipping name**

- **ADR**

1263 PAINT RELATED MATERIAL, special provision 640E

- **IMDG, IATA**

PAINT RELATED MATERIAL

- **14.3 Transport hazard class(es)**

- **ADR**



- **Class**

3 (F1) Flammable liquids.

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· Label	3
· IMDG, IATA	
	
· Class	3 Flammable liquids.
· Label	3
· 14.4 Packing group	
· ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	30
· EMS Number:	F-E,S-E
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN1263, PAINT RELATED MATERIAL, 3, III

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Directive 2012/18/EU**

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5.000 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50.000 t

· **National regulations:**

Danger to drinking water if even extremely small quantities leak into the ground.

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

· **Information about limitation of use:**

Employment restrictions concerning juveniles must be observed. (94/33/EC)

Employment restrictions concerning pregnant and lactating women must be observed. (92/85/EC)

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- **VOC (CE)** 179.2 g/l
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

- H226 Flammable liquid and vapour.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.

- **Department issuing MSDS:** Laboratory

- **Contact:**

Dr. Amina Chnirheb
 Amina.Chnirheb@forbo.com

- **Abbreviations and acronyms:**

- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
- ICAO: International Civil Aviation Organisation
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
- 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 Harmonised 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 (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- DNEL: Derived No-Effect Level (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Flam. Liq. 3: Flammable liquids, Hazard Category 3
- Acute Tox. 3: Acute toxicity, Hazard Category 3
- Acute Tox. 4: Acute toxicity, Hazard Category 4
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
- Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
- Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
- STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

- *** Data compared to the previous version altered.**