



# REACTION **ADVANCED** PRODUCT MANUAL

**VERSION 1 | APRIL 2016**



CLARKSON SERVICES LTD  
31 BOULEVARD FACTORY ESTATE, HULL, EAST YORKSHIRE, HU3 4AY

**REACTIONADVANCED.CO.UK**

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# 1. CONTACT LIST

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## Sales & Account Management | Technical Enquiries

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# 1. GENERAL PRECAUTIONS TO BE OBSERVED WHEN HANDLING AND USING CHEMICAL PRODUCTS

## Health and Safety at Work Act

The health and safety at work act requires every employer to ensure, as far as is reasonably practicable, the health, safety and welfare at work of all employees. It also requires employees to conduct themselves in a manner which will ensure their own safety and that of their fellow workers.

## Control of Substances Hazardous to Health Regulations (COSHH)

The COSHH Regulations require that any work which is liable to expose an employee to any substances hazardous to health shall not be carried out unless a suitable and sufficient assessment of the risks created by that work to the health of that employee and of the steps that need to be taken to meet the requirements of these regulations has been made. Every employee must make full and proper use of any control measures and personal protective equipment provided.

## The Following General Precautions Should Be Observed When Handling Or Working With Chemicals:

## Control of Substances Hazardous to Health Regulations (COSHH)

1. **Read the appropriate Product Technical Data and Safety Data sheets and all warning labels on containers before using any product.**
2. **Make sure that you are familiar with warning symbols.** Along the bottom of this poster are the warning symbols that you are likely to encounter on chemical products. These warning symbols have been designed to give you instant recognition of potentially harmful or dangerous chemicals.
3. **Do not swallow chemicals or breathe fumes or dust.** Should this happen accidentally, obtain medical attention immediately.
4. **Do not smoke near any chemicals,** especially those which contain chlorinated solvents, are flammable or oxidising. **Take care when opening containers.** Some materials are volatile and in warm weather it is possible that pressure may build up in the container. **Always** wear suitable eye/face protection.
5. **Do not 'SNIFF' chemicals.** This extremely dangerous practice can cause serious damage to your health.
6. **Store all chemicals away from sources of heat or ignition,** particularly volatile, flammable or oxidising materials.
7. Clean up any spillages immediately, using the recommended procedure.
8. **If any chemicals are splashed in the eyes, irrigate thoroughly with clean water for at least 15 minutes.** If you are unsure whether or not the product



### 3. PRODUCT DATA SHEET

#### REACTION ADVANCED - WASHOUT SOLVENT DESCRIPTION

**Reaction Advanced** is a non-flammable; non-carcinogenic; low odour blend of complex hydrocarbons and stabilised alcohols used for the processing of photopolymer flexographic printing plates.

#### Hazardous Pictograms



#### PPE & Health & Safety Pictograms



## 3. PRODUCT DATA SHEET

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### First Aid Measures

**Inhalation:** Supply fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation. Seek immediate medical advice

**Skin Contact:** Immediately wash with water and soap and rinse thoroughly. Remove contaminated clothing. Dispose of contaminated clothing. Repeated skin contact may result in irritation and dermatitis. Always wear protective gloves suitable for this product.

**Eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor. Seek immediate medical advice.

**Ingestion:** DO NOT induce vomiting; rinse mouth

### Packaging

Reaction Advanced is available in 25 litre non-returnable plastic drums, 205 litre non-returnable steel drums or 1000 litre returnable IBC's.

Always store the product in a well-ventilated area

### Product Safety, Handling & Storage

Always refer to the MSDS Sheet for **Safety** information, always store the product in well ventilated area.

### Service & Technical Support

Service is one of the most important insurances for consistent quality and performance of your process. Your Equilibrium representatives will tailor a service programme to meet the individual needs of the customer to ensure trouble free operations. Equilibrium is pleased to provide a complete range of technical services; your Equilibrium representative will provide you with details on how this service can benefit your process.

## 4. SYSTEM START UP PROCEDURES

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### **Processor Clean Down Procedure for Change-Over to Reaction Advanced™**

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The following process should be strictly adhered to when changing over processors from an existing solvent to Reaction Advanced™

#### **Solvent Change-Over:**

1. Empty old solvent from processor running tank into a suitable drum/IBC ready for disposal.
2. Fill the running tank with approximately 50 litres of Reaction Advanced™ and purge the system.
3. Empty purged Reaction Advanced™ from processor running tank, into a suitable drum/IBC ready for disposal.

Please note that steps 1 to 3 are required to avoid any major cross contamination issues when changing over to Reaction Advanced™.

### **Processor Setup for Reaction Advanced™**

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1. Reconnect pipe work and refill running tank to the correct operating level with Reaction Advanced™
2. Check running tank viscosity is zero.
3. Set and check Reaction Advanced™ replenishment rates.
4. Set temperature in running tank to between ambient and 26°C.
5. Perform over wash test on plate of choice.
6. Perform under wash test on plate of choice.
7. Monitor drying times and check plate relief.



## 4. SYSTEM START UP PROCEDURES

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### **Operating Specification for Reaction Advanced™**

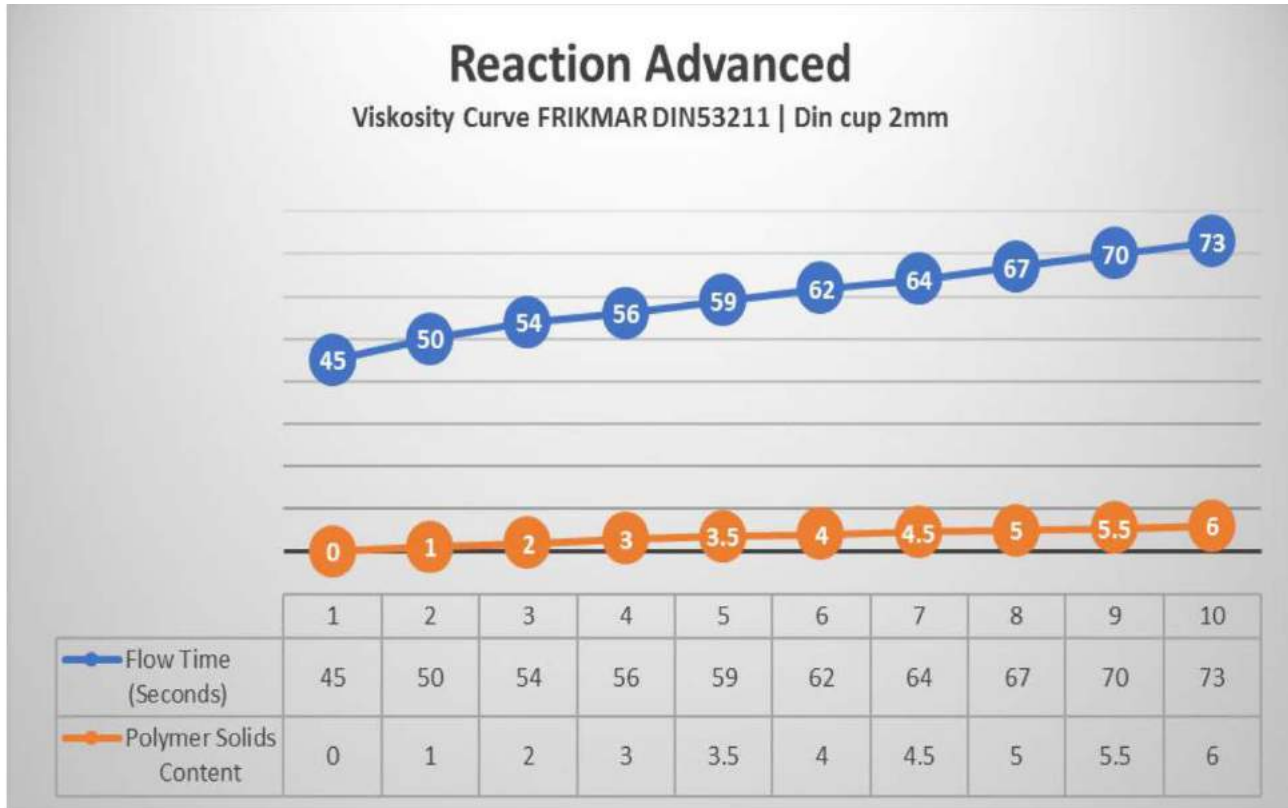
For optimum product performance Reaction Advanced™ should be controlled within the following operating ranges.

1. Temperature range between ambient and 26°C
2. Running tank solids level: 0 - 3.5%
3. Relative density 0.846 to 0.851 (applies to processors using in house distillation systems)

**IF IN DOUBT, PLEASE CONTACT THE REACTION ADVANCED™ TECHNICAL SUPPORT TEAM**

## 5. DIN CUP FLOW DATA

### Reaction Advanced™ Din Cup Flow Data



## 6. CHECKING OF DISTILLED SOLVENT

### Technical Bulletin

The following technical bulletin is a guide for the checking of freshly laundered (distilled) Flexographic Washout Solvent for customers with in-house distillation plants; to ensure constancy of laundered solvent.

1. Once solvent distillation unit has completed its cycle, recirculate the balancing tank for approximately 15 minutes.
2. After 15 minutes take a sample of the solvent from the balance tank and check using a Hydrometer or Density Meter (see hydrometer / density meter test method in your operations manual).

**Note: when taking the sample, run off the first 200 ml of laundered solvent from the sample point and discard, then take sample. This will ensure the sample you are taking is of the fresh and current laundered batch.**

3. Add more Reaction Advanced to the balance tank, then recirculate the balance tank for a further 15 minutes.
4. After 15 minutes take a sample of the solvent from the balance tank and recheck using the Hydrometer or Density Meter test method (see methods in your operations manual).

**Note: when taking the sample, run off the first 200 ml of laundered solvent from the sample point and discard, then take sample.**

5. If balanced material is to specification, transfer the contents of the balance tank into the running tank.

## 7. TEST METHOD: DENSITY METER

### Equipment Required

- \* Sample Jug
- \* Anton Paar DMA 35 Density Meter



### Test Method

- 1) Recirculate the distilled solvent in your system balancing tank. Mix well and then take a sample.
- 2) Turn on Density Meter.
- 3) Your sample is filled into the measuring cell of DMA 35 by simply pushing the lever on the built-in pump.
- 4) To obtain accurate measuring results it is essential that your sample is filled into the measuring cell without any gas bubbles. The measuring cell of DMA 35, visible from outside through an inspection window, is equipped with a backlight which makes it easy for you to observe the filling process closely.
- 5) DMA 35 measures the density of your sample and compensates to 20 °C.
- 6) Record reading on Operations Record Chart.
- 7) Follow procedures in Technical Bulletin 'Checking and Balancing of Freshly Distilled Flexographic Solvent'.

## 8. HYDROMETER TEST METHOD

### Equipment Required

- \* Sample Jug 500ml
- \* Thermometer 0 -100°C
- \* Hydrometer Jar 250 x 50mm
- \* Hydrometer 25cm SG 800 - 1000

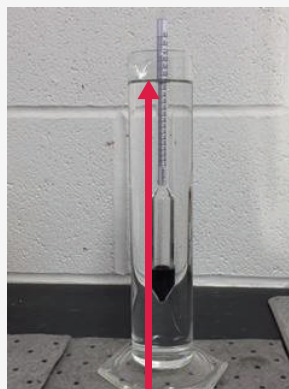
### Test Method

- 1) Recirculate the distilled solvent in your system balancing tank. Mix well and then take a sample.
- 2) Allow the solvent sample to cool to 20°C and check with thermometer.
- 3) Expel contents of the sample solvent into the Hydrometer jar 250 x 50 mm (see figure 1)
- 4) Drop in the Hydrometer and allow it to settle for 1 minute.
- 5) Take the Hydrometer reading (see figure 2) and record reading on Operations Record Chart.

Figure 1



Figure 2



Hydrometer Reading

- 6) Follow procedures in Technical Bulletin 'Checking and Balancing of Freshly Distilled Flexographic Solvent'



## 10. MSDS SHEETS



Printing Date 01.07.2016

### Safety Data Sheet 1907/2006/EC, EU Nr. 2015/830

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#### SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

##### 1.1 Product identifier

Trade name: REACTION ADVANCED™

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  
Flexographic Washout Solvent

##### 1.3 Details of the supplier of the safety data sheet

**Manufacturer/Supplier:**

Clarkson Services Ltd  
31 Boulevard Factory Estate  
Hull. HU3 4AY. East Yorkshire, UK  
Tel. +44 (0)1482 707664 | Fax. +44 (0)1482 781434

Further information obtainable from:  
[office@clarksonservices.co.uk](mailto:office@clarksonservices.co.uk)

1.4 Emergency telephone number: Contact us at the above office.

Additional Info Office is presently not 24 hour

#### SECTION 2: Hazards Identification

##### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008**

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.  
Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

##### 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**



GHS07

GHS08

GHS09

**Signal word** Danger

**Hazard-determining components of labelling:**

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics. Hydrocarbons, C9, aromatics

**Hazard statements**

H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.  
H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P273 Avoid release to the environment.  
P391 Collect spillage.

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P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 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: consisting of the following components.

Note: Solvent A100 CAS 64742-95-6 EINEC 265-199-0 has been renumbered as part of REACH and has no new CAS number but an EINEC of 918-668-5

Dangerous Components:		
Reg.nr.: 01-2120042087-62	Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics ⚠ Asp. Tox. 1, H304	25-50%
918-668-5 Reg.nr.: 01-2119455851-35	Hydrocarbons, C9, aromatics ⚠ Flam. Liq. 3, H226; ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ STOT SE 3, H335-H336	25-50%
CAS: 100-51-6 EINECS: 202-859-9 Reg.nr.: 01-2119492630-38	Benzyl Alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	10-25%

**Additional information:** For the wording of the listed hazard 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.

**After inhalation:** Supply fresh air; consult doctor in case of complaints.

**After skin contact:** Immediately wash with water and soap and rinse thoroughly.

**After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing:** If symptoms persist consult doctor.

**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:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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**5.2 Special hazards arising from the substance or mixture** No further relevant information available.

**5.3 Advice for firefighters**

**Protective equipment:** Wear self-contained respiratory protective device.

#### SECTION 6: Accidental Release Measures

**6.1 Personal precautions, protective equipment, and emergency procedures** Not required.

**6.2 Environmental precautions:**

Inform respective authorities in case of seepage into watercourse or sewage system.

Do not allow to enter sewers/ surface or ground water.

**6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**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**

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

**Information about fire - and explosion protection:** No special measures required.

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep container tightly sealed.

**7.3 Specific end use(s)** See §1.2

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

#### SECTION 8: Exposure Controls/Personal Protection

**8.1 Control parameters**

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

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

DNELs		
Hydrocarbons, C9, aromatics		
Oral	DNEL Long-term - Systemic (consumer)	11 mg/kg bw/day (/)
Dermal	DNEL Long-term - Systemic (consumer) DNEL	11 mg/kg bw/day (/)
	Long-term - Systemic (worker)	25 mg/kg bw/day (/)
Inhalative	DNEL Long-term - Systemic (worker)	150 mg/m <sup>3</sup> (/)

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**5.2 Special hazards arising from the substance or mixture** No further relevant information available.

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**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep container tightly sealed.

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Dermal	DNEL Long-term - Systemic (consumer) DNEL	11 mg/kg bw/day (/)
	Long-term - Systemic (worker)	25 mg/kg bw/day (/)
Inhalative	DNEL Long-term - Systemic (worker)	150 mg/m <sup>3</sup> (/)

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<b>100-51-6 Benzyl alcohol</b>		
Oral	DNEL Acute - Systemic (consumer)	25 mg/kg bw/day (/)
	DNEL Long-term - Systemic (consumer)	5 mg/kg bw/day (/)
Dermal	DNEL Acute - Systemic (consumer)	28.5 mg/kg bw/day (/)
	DNEL Acute - Systemic (worker)	47 mg/kg bw/day (/)
Inhalative	DNEL Long-term - Systemic (consumer)	5.7 mg/kg bw/day (/)
	DNEL Long-term - Systemic (worker)	9.5 mg/kg bw/day (/)
	DNEL Acute - Systemic (consumer)	95.5 mg/m <sup>3</sup> (/)
	DNEL Acute - Systemic (worker)	450 mg/m <sup>3</sup> (/)
	DNEL Long-term - Systemic (consumer)	19.1 mg/m <sup>3</sup> (/)
	DNEL Long-term - Systemic (worker)	90 mg/m <sup>3</sup> (/)

<b>PNECs</b>	
<b>100-51-6 Benzyl alcohol</b>	
PNEC Fresh water	1 mg/l (/)
PNEC Fresh water sediment	5.27 mg/kg (/)
PNEC Intermittent releases	2.3 mg/l (/)
PNEC Marine sediment	0.527 mg/kg (/)
PNEC Marine water	0.1 mg/l (/)
PNEC STP	39 mg/l (/)
PNEC Soil	0.456 mg/kg (/)

**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.

#### 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.

#### Protection of hands:

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

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.

**Eye protection:** Goggles recommended during refilling

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### SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties	
<b>General Information</b>	
<b>Appearance:</b>	
<b>Form:</b>	Fluid
<b>Colour:</b>	According to product specification
<b>Odour:</b>	Specific type
<b>Odour threshold:</b>	Not determined.
<b>pH-value:</b>	Not determined.
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	Undetermined.
<b>Flash point:</b>	62 °C
<b>Flammability (solid, gaseous):</b>	Not applicable.
<b>Auto-ignition temperature:</b>	> 200 °C
<b>Decomposition temperature:</b>	Not determined.
<b>Self-igniting:</b>	Product is not selfigniting.
<b>Danger of explosion:</b>	Product does not present an explosion hazard.
<b>Explosion limits:</b>	
<b>Lower:</b>	0.5 Vol %
<b>Upper:</b>	13.0 Vol %
<b>Vapour pressure at 20 °C:</b>	100 hPa
<b>Density at 20 °C:</b>	0.848 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Solubility in / Miscibility withwater:</b>	Not miscible or difficult to mix.
<b>Oxidizing properties</b>	
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined
<b>Kinematic:</b>	1.48 mm <sup>2</sup> /s
<b>Solvent content:</b>	
<b>Organic solvents:</b>	22.0 %
<b>9.2 Other information</b> No further relevant information available.	

### SECTION 10: Stability and Reactivity

10.1 Reactivity Not determined.

10.2 Chemical stability

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions No dangerous reactions known.

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.

**Additional information:** None.

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### SECTION 11: Toxicological Information

#### 11.1 Information on toxicological effects

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

<b>LD/LC50 values relevant for classification:</b>		
<b>185857-36-7 Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, &lt;2% aromatics</b>		
Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rat)
<b>Hydrocarbons, C9, aromatics</b>		
Oral	LD50	>2000- ≤ 5000 mg/kg (rat) (OECD Guideline 401)
Dermal	LD50	>2000 mg/kg (rabbit)
<b>100-51-6 Benzyl alcohol</b>		
Oral	LD50	1230 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)
Inhalative	LC50/4 h	> 41.78 mg/l (rat)

**Primary irritant effect:**

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

**Serious eye damage/irritation** Based on available data, the classification criteria are not met.

**Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

**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. May cause drowsiness or dizziness.

**STOT-repeated exposure** Based on available data, the classification criteria are not met.

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

### SECTION 12: Ecological Information

#### 12.1 Toxicity

<b>Aquatic toxicity:</b>	
<b>185857-36-7 Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, &lt;2% aromatics</b>	
LC/EC/IC 50	>100 mg/l (fish) >100 mg/l (algae)
<b>Hydrocarbons, C9, aromatics</b>	
LC/EC/IC 50	1-10 mg/l (fish) 1-10 mg/l (algae) >100 mg/l (Bacteria)
NOEC	1-10 mg/l (Activated Sludge) 1-10 mg/l (fish) 1-10 mg/l (Activated Sludge)
<b>100-51-6 Benzyl alcohol</b>	
EC 10 (16u)	658 mg/l ( <i>Pseudomonas putida</i> )
EC 50 (24u)	55 mg/l ( <i>daphnia magna</i> )
EC 50 (48 u)	360 mg/l ( <i>daphnia magna</i> ) (OECD 202)
EC 50 (96u)	640 mg/l (algae) ( <i>Scenedesmus quadricauda</i> , OECD 201)
LC 50 (48 u)	646 mg/l ( <i>Leuciscus idus</i> )
LC 50 (96 u)	10 mg/l ( <i>Lepomis macrochirus</i> )

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**Safety Data Sheet**  
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**12.2 Persistence and degradability** No further relevant information available.

<b>Degree of elimination:</b>	
<b>100-51-6 Benzyl alcohol</b>	
OECD 301 D	>90 % (l)

**12.3 Bioaccumulative potential** No further relevant information available.

**12.4 Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Toxic for fish

**Additional ecological information:**

**General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

**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 Consideration

**13.1 Waste treatment methods**


**Recommendation**

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

**Uncleaned packaging:**

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

## SECTION 14: Transport Information

<b>14.1 UN-Number</b> ADR, IMDG, IATA	UN3082
<b>14.2 UN proper shipping name</b> ADR/RID	3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Hydrocarbons, C9, aromatics)
<b>IMDG</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Hydrocarbons, C9, aromatics), MARINE POLLUTANT
<b>IATA</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Hydrocarbons, C9, aromatics)
<b>14.3 Transport hazard class(es)</b> ADR, IMDG, IATA	
	
<b>Class</b>	9 Miscellaneous dangerous substances and articles.
<b>Label</b>	9

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# 10. MSDS SHEETS



Printing Date 01.07.2016

## Safety Data Sheet

1907/2006/EC, EU Nr. 2015/830

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**Trade name: REACTION ADVANCED™**

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14.4 Packing group ADR, IMDG, IATA	III
14.5 Environmental hazards:  Marine pollutant:	Product contains environmentally hazardous substances: Hydrocarbons, C9, aromatics Yes Symbol (fish and tree)
Special marking (ADR/RID): Special marking (IATA):	Symbol (fish and tree) Symbol (fish and tree)
14.6 Special precautions for user  Danger code (Kemler): EMS Number:	Warning: Miscellaneous dangerous substances and articles. 90 F-A,S-F
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
Transport/Additional information: ADR Limited quantities (LQ) Excepted quantities (EQ)  Transport category Tunnel restriction code IMDG Limited quantities (LQ) Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml 3 E  5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
UN "Model Regulation":	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Hydrocarbons, C9, aromatics), 9, III

### SECTION 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
Labelling according to Regulation (EC) No 1272/2008 GHS label elements

Directive 2012/18/EU

Named dangerous substances - ANNEX I None of the ingredients is listed.

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

National regulations:

Technical instructions (air):

Class	Share in %
NK	22.0

Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.



## 10. MSDS SHEETS



Printing Date 01.07.2016

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#### SECTION 16: Other Information

"The information provided in these documents is based on our present state of knowledge of the product and is given in good faith and to the best of our experience. However, it should not be construed as a technical specification or as guaranteeing specific properties. In no event we will be responsible for damages or effects of any nature whatsoever, either express or implied, resulting from the use of this information. It is the own responsibility of the consignee and the user of the product to comply with all prevailing and applicable laws, regulations and directives. They should also make their own determination as to the suitability of the product for a particular use or application."

#### Relevant phrases

H226 Flammable liquid and vapour.  
H302 Harmful if swallowed.  
H304 May be fatal if swallowed and enters airways.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.  
H411 Toxic to aquatic life with long lasting effects.

#### Emergency Numbers

UNITED KINGDOM +44 (0)1482 707664

#### 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 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)  
DNEL: Derived No-Effect Level (REACH)  
PNEC: Predicted No-Effect Concentration (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 – Category 3  
Acute Tox. 4: Acute toxicity – Category 4  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
Asp. Tox. 1: Aspiration hazard – Category 1  
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2



# 12. ISO 9001:2008



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# 12. ISO14001



# 11. OFF-SITE LABORATORY SAMPLE REQUEST METHOD

Customer	
Address	
Contact	
Date	

Sample (please give a brief description below):

Testing Required (please tick as appropriate):


Relative density – Anton Parr method	
Relative density – Hydrometer method	
pH	
Solids	
Waste Analysis For Disposal	




REACTION ADVANCED



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