



## Frequently Asked Questions

### 1. SELECTIVE CATALYTIC REDUCTION (SCR)

#### **Q. What is Euro IV, Euro V and Euro VI?**

**A:** Euro IV, Euro V and Euro VI are standards set by the EU, to control emission of pollutants from heavy-duty vehicles. NOx, particulate matter (PM), hydrocarbons (HC) and carbon monoxide (CO) are the regulated components. Emission limits for NOx are 0.25 g/km in Euro IV, 0.18 g/km in Euro V and 0.08 g/km in Euro VI. The Euro IV standard will be implemented as of Oct. 2006, Euro V as of Oct. 2009 and Euro VI as of Nov. 2014.

#### **Q. What is SCR-technology?**

**A:** SCR stands for Selective Catalytic Reduction which indicates that only NOx and no other oxidized species (thus selectively) is chemically reduced to elemental nitrogen and water on a purpose-built catalyst. Most major European heavy-duty vehicles manufacturers have decided to use this technology to meet the new emission legislation. The main components of the SCR system are the SCR catalyst, the DEF/BlueChem® injection unit, the DEF/BlueChem® tank and the DEF/BlueChem® dosing control unit. The harmful NOx molecules in the exhaust are converted to harmless elemental nitrogen and water. This happens when NOx reacts inside the catalyst with the ammonia in the DEF/BlueChem®. The DEF/BlueChem®, coming from the DEF/BlueChem® tank, is injected into the exhaust pipe upstream of the catalyst where its urea molecules react with heat and water to form the ammonia needed.

#### **Q. Is this a new technique?**

**A:** No, it is a proven technique in the chemical industry and for power plants; it has been tested for millions of Km in trucks by all brands under all circumstances.

#### **Q. What are the advantages of the SCR technology?**

**A:** Due to the absolutely extensive testing of the SCR technology it has been proven that the diesel consumption reduces up to 5% (the SCR technique has proven to be absolutely reliable during extensive testing in the last few years and reduces diesel consumption up to 5%). Long term solution for the longer term: SCR technology has proven that the standards as set in Euro 4, Euro 5 and Euro VI standards can easily be met. SCR can probably continue to be used for Euro VII as well.

Tax reductions and subsidies: several European countries encourage compliance with Euro 4, 5 and 6 standards by offering financial incentives. For instance, in Germany lowered road tolls result in a financial advantage of 2 to 3 Eurocents per kilometer. In the UK the RPC is being reintroduced.

#### **Q. What are the disadvantages of SCR technology?**

**A:** To purchase a new Euro IV or V or VI vehicle where the DEF/BlueChem® usage is needed is more expensive in contrast to a Euro III vehicle. (The new Euro IV, V and VI standard vehicles are more expensive and you will need to use DEF/BlueChem®).

#### **Q. Has SCR-technology been chosen by all heavy-duty vehicle manufacturers?**

**A:** Euro 4: Besides MAN and Scania, who have chosen for the EGR (Exhaust Gas Recirculation) technique, all other manufacturers have chosen for SCR technology. Euro 5 and 6: All manufacturers - including MAN and Scania - have decided to implement the SCR technique, which requires the use of DEF/BlueChem® for the heavy duty vehicles.



## Frequently Asked Questions

### 2. DEF/BLUECHEM®

#### **Q. What is DEF/BlueChem®?**

**A:** DEF/BlueChem® is a non-toxic aqueous urea solution (32.5%) (AUS32) used to chemically reduce NO<sub>x</sub>-emission from heavy-duty diesel powered engine/vehicles. DEF/BlueChem® is neither explosive nor harmful to the environment and is classified under the minimum-risk category of transportable fluids. DEF/BlueChem® has the product specifications as laid down in DIN V 70070.

#### **Q. Why do I need DEF/BlueChem®?**

**A:** To fulfill the environmental offence, the Euro 4 norm after October 2006.

#### **Q. What makes BlueChem® so special?**

**A:** BlueChem® is an extremely pure solution. Heavy duty vehicle manufacturers demand this level of purity of DEF/BlueChem®, because of the warranty they give on their vehicles.

### 3. TEMPERATURE ISSUES

#### **Q. What is the optimal storage temperature for DEF/BlueChem®**

**A:** Optimal storage temperature is 5°C to 40°C.

#### **Q: Can DEF/BlueChem® be exposed to sunlight?**

**A:** No, direct exposure of DEF/BlueChem® to sunlight must be avoided.

### 4. IN CASE OF FIRE

#### **Q. How will DEF/BlueChem® reacts in case of a fire on the vehicle?**

**A:** DEF/BlueChem® will not aid combustion.

#### **Q: Is DEF/BlueChem® flammable? Is it a dangerous product?**

**A:** No, it is a non hazardous product, no ADR category; it is not dangerous and not flammable!

#### **Q. Will it aid combustion in any way?**

**A:** No the product will remain in dilution subject to it being made to DIN70070.

#### **Q. Does the water in the DEF/BlueChem® evaporates leaving Ammonia to burn?**

**A:** No.



## Frequently Asked Questions

### 5. AGGRESSIVENESS

**Q. What effect will it have on automotive paint if spilled during filling?**

**A:** If spillage is cleaned up no problem. If spillage is allowed to dry and crystallize on the vehicle then surface corrosion will start to take place.

**Q. If a guard was to be applied onto the filling area on the vehicle what material can it be made of?**

**A:** Ideally from plastic as it's the most compatible surface with Urea.

### 6. SPILLAGE

**Q: What about crystallization? What is it, what does it?**

**A:** Crystallization (solid white crystals) appears (after a while) when water is evaporating from the solution. The solid crystals will creep everywhere on the truck. It will attack the paint. They dissolve again when cleaned with a lot of hot water.

**Q. How quickly will it crystallize?**

**A:** Depending on temperature and moisture in the air. Normally around 30 minutes.

**Q. How best to remove crystallization from surfaces?**

**A:** Rinse with hot water.

**Q. How best to clean up a small spillage?**

**A:** Rinse away with hot water.

**Q: What happens when DEF/BlueChem® is spilled on the truck?**

**A:** The product is corrosive so it will slowly attack the paint and later on the metal beneath it, so it is very important to prevent spillage as far as possible and clean with as much water as possible.

### 7. OTHERS

**Q. What happens if your drive a Euro 4 without DEF/BlueChem®?**

**A:** The vehicle will continue to operate until the catalyst breaks down because of the lack of DEF/BlueChem® or the presence of bad material. Some OEM will restrict vehicle to limp mode @ 20 MPH. In both cases the vehicle will be classed as contravening road act and maybe subject to a GV9.

**Q. Is DEF/BlueChem® miscible with water?**

**A:** Yes it is 100% miscible.

**Q. What is the PH value for DEF/BlueChem®?**

**A:** PH value is 10.

**Q. Will the authorities be able to see that a SCR truck has been running without DEF/BlueChem®? How can this be traced given that On Board Diagnostics will not come into effect till Euro 5?**

**A:** Yes. Again this is subject to various instruments installed by OEM.



## **Frequently Asked Questions**

### **Q. What is the shelf life of DEF/BlueChem®? How long can I store it?**

**A:** Minimum one year under normal conditions, we give a warranty for one year, probably much longer.

### **Q: How much DEF/BlueChem® will I need?**

**A:** The average DEF/BlueChem® consumption will be about 5% by volume of diesel consumption for Euro IV and about 6% for Euro V. Roughly this amounts to an DEF/BlueChem® consumption of 1.7 litres per 100 km of driving.

### **Q. Do I mix the DEF/BlueChem® with the Diesel?**

**A:** No, no, no it is being tanked in two separate tanks and will never be mixed; the DEF/BlueChem® will be separately injected in the exhaust system.

### **Q. What happens if a heavy duty engine runs without DEF/BlueChem®?**

**A:** This will result in crossing the allowed emission levels; for the diesel engine runs in a fuel optimized way, which has a negative impact on the NOx emission. For that reason sensors are placed in the exhaust pipe to measure the NOx emission. The measurement results are stored in the OBD-system (On Board Diagnostic) and are periodically controlled. Important, when not using the DEF/BlueChem® liquid the dosing system gets blocked and will not function when using again and the catalyst itself can be damaged and clogged as well. Warranty will be withdrawn by the dealer when driving without DEF/BlueChem®.

### **Q. Where can I get DEF/BlueChem®?**

**A:** In our BlueChem® Factory in UAE.  
Al-Azraq Chemical Industries LLC,  
4, Plot No.4303, Street No.3  
Industrial Area No 10,  
Sharjah, UAE.  
[Tel:0097165642127](tel:0097165642127),  
[Fax:0097165646119](tel:0097165646119),  
E-Mail; [sales@bluechemgulf.com](mailto:sales@bluechemgulf.com)

### **Q: Can I get the product on my home base like the diesel?**

**A:** Yes, DEF/BlueChem® has several solutions for all our customer wishes. Home base unit can be placed on the premises of the customer. Either above the ground or underground according to volume.

### **Q. In what package can I get DEF/BlueChem®?**

**A:** DEF/BlueChem® offers 10 Ltrs. cans, 20 Ltrs. cans, 1000 Ltrs. IBC with pump set, bulk installations from 4,000-40,000 Ltrs. above and underground tanks and technical assistance can be provided on customer's specific requirements.

## **8. BLUECHEM - DEF/BLUECHEM®**

### **Q. What makes BlueChem™ different from competition? Why should I buy from you?**

**A:** We are very much service oriented.

- Fully integrated concept: product, installation and service.
- Independent from supplier.
- 100% dedicated and specialized in the DEF/BlueChem® business.
- Very innovative customer oriented solutions.
- Guaranteed product quality according to DIN 70070.
- Market conform prices.
- Efficient state logistics.