Water Hazard Classification (WGK) in Germany

Regulatory Profile – Germany (WGK - Wassergefährdungsklasse)

Chemical Regulation Authority: Federal Environment Agency (Umweltbundesamt, UBA)

Scope and Framework:

The Wassergefährdungsklasse (WGK), or Water Hazard Classification, is Germany's national system for assessing the potential environmental hazard posed by substances and mixtures to water bodies. It is a core component of the country's implementation of the European Union's Water Framework Directive (Directive 2000/60/EC), aimed at achieving 'good status' for all waters within the EU.

The WGK system is embedded in the national legal framework through the:
• Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV – Ordinance on Facilities Handling Substances Hazardous to Water)
• Wasserhaushaltsgesetz (WHG – Water Resources Act), which provides overarching legal authority for water protection

Under these laws, facilities handling hazardous substances must adhere to specific requirements based on the WGK classification of those substances. These rules govern the design, operation, containment, and emergency planning aspects of chemical storage and handling infrastructure.

Classification System:

The WGK system classifies substances into the following categories based on environmental criteria such as biodegradability, aquatic toxicity, and bioaccumulation potential:

• WGK 1 – Slightly hazardous to water (e.g., ethanol, propylene glycol)
• WGK 2 – Hazardous to water (e.g., sodium hydroxide, formaldehyde)
• WGK 3 – Severely hazardous to water (e.g., aniline, nonylphenol)
• nwg – Not hazardous to water (e.g., some salts and inorganics not classified)

These hazard classes are assigned via self-classification by importers/manufacturers or from official assessments maintained by the Federal Environment Agency. Once classified, substances must be reported and made publicly available via the Rigoletto database.

Implementation and Compliance:

WGK values have operational implications for all chemical handling infrastructure in Germany. Facilities storing or using chemicals must comply with structural, procedural, and administrative requirements depending on the WGK class of the substance involved. This includes:

- Containment volume requirements
- Material compatibility and corrosion protection standards
- Spill and leak detection systems
- Distance regulations to water bodies and sensitive sites
- Documentation and inspection obligations

Non-compliance with WGK-related infrastructure rules under the AwSV can result in administrative penalties and enforcement measures by the regional water authorities (Länder).

Connection to EU Water Framework Directive:

Germany's WGK system directly supports the goals of the EU Water Framework Directive (2000/60/EC), which aims to ensure sustainable water use and prevent deterioration of aquatic environments. The WGK classification is used to assess potential risks from chemical installations and manage diffuse or point source water pollution. By incorporating WGK thresholds into national law (via AwSV and WHG), Germany fulfills its obligation to implement robust pollution control measures for achieving good water quality status.

Key Legislation and Databases:

- **AwSV (Official text):** https://www.gesetze-im-internet.de/awsv/

- **WHG (Water Resources Act):** https://www.gesetze-im-internet.de/whg_2009/

- **Rigoletto WGK Database (UBA):** https://rigoletto.uba.de/rigoletto/public/search/index

- **EU Water Framework Directive:** https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060