



INTERNATIONAL
CLIMATE
INTELLIGENCE SYSTEM

ICIS PCR for Chemical Products



ICIS PCR for Chemical Products

V1.0

2025

General

The ICIS Product Category Rules (PCR) for Chemical Products establish a standardized methodology for performing Life Cycle Assessments (LCAs) and preparing Environmental Product Declarations (EPDs) specific to a wide range of industrial and specialty chemicals. Developed in accordance with ISO 14025, ISO 21930, and EN 15804, and governed by the International Climate Intelligence System (ICIS), this PCR ensures the consistent, transparent, and credible environmental evaluation of chemical products throughout their life cycle.

This PCR is applicable to both base chemicals and formulated compounds used in sectors such as manufacturing, agriculture, construction, pharmaceuticals, electronics, and consumer goods. It defines system boundaries, impact categories, and functional units tailored to chemical supply chains, accounting for upstream raw materials, production energy, emissions, co-products, packaging, and end-of-life scenarios.

Key features of this PCR include:

- Industry-specific functional units and system boundary guidance for different chemical families.
- Standardized environmental impact indicators including global warming potential, acidification, eutrophication, and human toxicity.
- Rules for modeling multi-output processes, recycling loops, and downstream applications.
- Data quality criteria and third-party verification requirements to support robust EPD development.

By adhering to this PCR, manufacturers of chemical products can credibly communicate their environmental footprint, contribute to responsible supply chain transparency, and align with regulatory and voluntary sustainability reporting frameworks globally.

Disclaimer

This document is intended solely for informational and methodological use as part of the ICIS Product Category Rules (PCR) for Chemical Products. It does not serve as legal advice, product certification, or regulatory approval. While the methodologies outlined are based on internationally recognized standards and updated best practices, users are responsible for ensuring compliance with all applicable local, national, and industry-specific regulations.

The content of this PCR may be revised periodically in response to new scientific research, regulatory developments, or stakeholder input. ICIS does not accept liability for decisions, calculations, or claims made based on the use of this document. For certified EPD submissions or formal verification processes, please consult www.climateintell.com or engage with an ICIS-accredited verifier or program operator.

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1.0 INTRODUCTION AND SCOPE

PCRs serve as the foundation for environmental assessment in the chemical industry. Their primary purpose is to ensure that LCAs and EPDs for similar chemical products follow consistent methodologies, enabling meaningful comparisons between products that fulfill equivalent functions. This standardization is critical for creating a level playing field in environmental reporting.

PCRs enable transparency by establishing clear guidelines on which environmental impacts must be measured and reported. They define the scope of assessment, ensuring that all relevant environmental aspects of a chemical product's life cycle are considered. Without such rules, different manufacturers might measure different parameters or use varying methodologies, making it impossible for customers, regulators, and other stakeholders to compare environmental performance accurately.

The scope of these PCRs is developed in accordance with international standards, particularly ISO 14025 (Environmental labels and declarations 4 Type III environmental declarations 4 Principles and procedures) and ISO 14040/14044 (Environmental management 4 Life cycle assessment 4 Principles and framework/Requirements and guidelines). These standards provide the methodological backbone for conducting rigorous environmental assessments. Additionally, these PCRs incorporate general industry practices and consensus-based approaches developed through stakeholder consultation processes.

By following these PCRs, chemical manufacturers can develop credible environmental claims that stand up to scrutiny, avoid green washing accusations, and provide valuable information to their customers. The rules outlined in this document represent the best current practices in environmental assessment for chemical products and will be periodically updated to reflect advances in scientific understanding and industry capabilities.

2.0 DEFINITION OF CHEMICAL PRODUCTS CATEGORY

The chemical products category encompasses a broad spectrum of substances manufactured through chemical processes for commercial and industrial applications. This PCR document specifically addresses three major segments of the chemical industry: basic chemicals, specialty chemicals, and agrochemicals. Each segment presents distinct environmental challenges and opportunities that must be properly accounted for in life cycle assessments.

2.1 Basic Chemicals

Basic chemicals include high-volume, commodity substances such as petrochemicals, polymers, industrial gases, and inorganic chemicals that serve as building blocks for downstream products. These typically involve energy-intensive production processes and standardized manufacturing methods.

2.2 Specialty Chemicals

Specialty chemicals comprise lower-volume, higher-value products formulated for specific applications, including adhesives, catalysts, coatings, electronic chemicals, and industrial cleaning compounds. These products often involve more complex synthesis routes and formulation steps.

2.3 Agrochemicals

Agrochemicals include fertilizers, pesticides, herbicides, and other agricultural inputs designed to enhance crop production and protection.

For classification purposes, this PCR aligns with internationally recognized product coding systems, including the Central Product Classification (CPC), Harmonized System (HS), and other relevant industrial classification schemes. This alignment ensures compatibility with global trade and regulatory frameworks, facilitating consistent application across different regions and markets.

2.4 Excluded Product Categories

It is important to note that this PCR explicitly excludes construction chemical products, which are covered under separate PCR documents due to their distinct application contexts and performance requirements. Other exclusions include pharmaceuticals, food additives, and consumer chemical products, which may have additional regulatory and environmental considerations beyond the scope of this document. These boundaries have been established to ensure that the PCR provides focused and relevant guidance for the intended product categories.

3.0 REFERENCE STANDARDS AND METHODOLOGY

The development and application of these Product Category Rules are firmly anchored in internationally recognized standards of the products that provide methodological consistency and scientific rigor. These reference standards ensure that environmental assessments performed under these PCRs will be technically sound and globally relevant. In addition to the product specific standard, follow the General Program Instructions of ICIS.

3.1 ISO 14025, ISO 14040/44

ISO 14025 serves as the primary reference for the creation and use of Environmental Product Declarations (EPDs). This standard establishes the principles and procedures for developing Type III environmental declarations, which provide quantified environmental data using predetermined parameters. It sets requirements for the development of PCRs and outlines the verification processes necessary to ensure credibility. Complementing this, ISO 14040 and ISO 14044 provide the foundational framework for conducting Life Cycle Assessments (LCAs). These standards detail the principles, framework, requirements, and guidelines for assessing the environmental impacts of products throughout their life cycle, from raw material extraction to end-of-life disposal.

3.2 ICIS Methodology

Beyond ISO standards, these PCRs incorporate the methodological guidelines developed by ICIS. The ICIS methodology emphasizes clarity in reporting, consistency in calculation approaches, and

accessibility of information for diverse stakeholders. This alignment ensures that environmental declarations produced under these PCRs will be compatible with global climate intelligence frameworks and accessible to non-technical audiences.

3.3 EPD System Guidance

Additionally, these PCRs follow international standards, which provide practical guidance on how to develop, verify, and publish EPDs. This alignment ensures that EPDs developed using these standards will be compatible with the global EPD programs, facilitating international recognition and acceptance.

4.0 SYSTEM BOUNDARY AND FUNCTIONAL UNIT

The system boundary defines which processes and life cycle stages are included in the assessment of a chemical product's environmental impact.

4.1 Cradle-to-Gate and Cradle-to-Grave Approaches

For chemical products, this PCR typically recommends one of two approaches: "cradle-to-gate" or "cradle-to-grave." A cradle-to-gate boundary encompasses all processes from raw material extraction through manufacturing until the product leaves the factory gate. This boundary is appropriate when the downstream use and disposal of the chemical product vary significantly depending on the application or when the manufacturer has limited influence over these stages.

A cradle-to-grave boundary extends the assessment to include the distribution, use phase, and end-of-life management of the chemical product. This more comprehensive approach is recommended when the manufacturer can reasonably predict how the product will be used and disposed of, or when the environmental impacts of these downstream stages are significant. For intermediate chemicals that undergo further processing, a cradle-to-gate boundary with options for inclusion of downstream modules (as per EN 15804) may be most appropriate.

4.2 Functional Unit Definition and Justification

The functional unit is the quantified performance of a product system for use as a reference unit in an LCA study. For chemical products, this PCR defines the default functional unit as 1 metric ton (1,000 kg) of the final chemical product as delivered to the customer. This mass-based functional unit facilitates comparisons between different chemical products with similar functions. However, for specialty chemicals with specific performance characteristics, alternative functional units may be more appropriate. For example, the amount of product required to achieve a standardized level of performance (e.g., the amount of catalyst needed to produce a specific quantity of output).

4.3 System Boundary Diagram Requirements

When developing an EPD under these PCRs, manufacturers must clearly define and justify both the system boundary and functional unit chosen for their assessment. The justification should consider the intended application of the chemical product, its technical performance, and how it will typically

be used by customers. The system boundary diagram must be included in the EPD, clearly illustrating which processes are included and excluded from the assessment. Any deviations from the default functional unit must be thoroughly explained and justified based on the specific characteristics and applications of the chemical product.

5.0 LIFE CYCLE STAGES INCLUDED

The comprehensive life cycle approach required by this PCR ensures that all significant environmental aspects are captured in the assessment. For each stage, manufacturers must document the data sources, calculation methodologies, and any assumptions made. Particular attention should be paid to energy-intensive processes, hazardous emissions, and resource consumption hotspots throughout the life cycle.

5.1 Raw Material Extraction and Processing

Encompasses the extraction of fossil and mineral resources, agricultural production of bio-based feed stocks, transportation to processing facilities, and initial refining or processing steps. This stage typically accounts for significant environmental impacts, particularly for petrochemical-based products.

5.2 Chemical Synthesis and Production

Covers all manufacturing processes including chemical reactions, separations, purification, and formulation. Energy consumption, process emissions, catalyst use, and utilities (steam, cooling water, and compressed air) must be included. This stage often represents the highest energy intensity in the product life cycle.

5.3 Packaging and Distribution

Includes production of primary, secondary, and tertiary packaging materials, filling/packaging operations, and transportation to distribution centers or customers. Different packaging scenarios should be considered when relevant to the product.

5.4 Use Phase

When included in the system boundary, this stage accounts for how the chemical product is used in downstream applications, including any energy or ancillary materials required. For reactive chemicals, emissions during use must be modeled.

5.5 End of Life

Encompasses waste collection, recycling processes, energy recovery, and final disposal options. This stage must account for the specific chemical's degradation behavior and potential environmental persistence.

When developing EPDs with a cradle-to-gate scope, manufacturers must include information on the potential environmental impacts of downstream stages, even if these are not quantified in the core assessment. This provides transparency and context for stakeholders considering the full life cycle implications of the chemical product.

6.0 DATA QUALITY REQUIREMENTS

High-quality data is the foundation of credible environmental assessments. This PCR establishes rigorous requirements for data collection and management to ensure that EPDs provide reliable information about chemical products' environmental performance. The data quality assessment must consider temporal, geographical, and technological representativeness, as well as precision, completeness, and consistency.

6.1 Primary Data Requirements

- Site-specific data required for all manufacturing processes under direct control
- Must represent at least one full year of production
- Should not be more than 2 years old
- Must account for seasonal variations in production
- Should represent technology- specific processes

For primary data collection, manufacturers should implement systematic data gathering procedures that align with their existing management systems. This may include energy and material flow monitoring, emission measurements, and production records. Any extrapolation from measured data should be documented and justified.

6.2 Secondary Data Requirements

- Must be from reputable databases (e.g., Ecoinvent, GaBi, ELCD)
- Should be geographically relevant to production region
- Should represent current technology levels
- Should not be more than 10 years old
- Sources must be fully documented

When primary data cannot be obtained, secondary data may be used, but the sources must be transparent and appropriate for the specific process being modeled.

6.3 Proxy Data and Data Gaps

- Gap filling methodology must be transparent
- Proxy data should represent similar chemical processes
- Conservative assumptions preferred when data is uncertain
- Sensitivity analysis required for significant proxy data
- Data gaps must not exceed 10% of total impact

6.4 Tiered Data Quality Assessment

The data quality requirements in this PCR follow a tiered approach, with stricter requirements for processes that contribute significantly to the overall environmental impact. For minor inputs or processes contributing less than 5% to the total impact in any impact category, simplified approaches may be acceptable if fully documented. However, the cumulative effect of such simplifications must not exceed 10% of the total impact in any category.

All data sources, quality assessments, and methodological choices must be documented in the LCA report and summarized in the EPD. This transparency enables stakeholders to evaluate the robustness of the environmental claims and supports the verification process. Regular review and updating of data is encouraged to ensure that EPDs remain representative of current production practices and environmental performance.

7.0 CALCULATION AND ALLOCATION RULES

The environmental impacts of chemical production processes must be calculated using methodologies consistent with ISO 14040/14044. This PCR establishes specific rules for handling multi-output processes, waste treatment, and recycling scenarios to ensure consistency across different EPDs in the chemical sector. These calculation rules are essential for producing fair and comparable results.

7.1 Allocation Method Hierarchy

Allocation, the distribution of environmental burdens among multiple outputs from a single process, represents a critical methodological choice in LCA studies for chemical products. Many chemical manufacturing processes generate multiple valuable products, requiring careful allocation of environmental impacts. This PCR establishes a preferred hierarchy for allocation methods: first, avoid allocation through system expansion or subdivision where possible; second, use allocation based on physical relationships (mass, energy content, molar flow); and third, if physical relationships do not reflect the value relationships, use economic allocation based on market prices.

7.2 Economic Allocation Criteria

For complex chemical production systems with interconnected material and energy flows, such as integrated petrochemical complexes, the allocation approach must be documented in detail. Process flow diagrams should clearly identify system boundaries and allocation points. When economic allocation is used, the price data must be documented and should represent a 5-year average to minimize the effects of market fluctuations. Price confidentiality concerns must be balanced with transparency requirements, potentially using indexed or normalized values.

Allocation Guidelines:

- Avoid allocation through system expansion or subdivision
- Allocate based on physical relationships (mass, energy, molar flow)
- Use economic allocation only when physical relationships don't reflect value
- Document all allocation decisions with clear justification
- Conduct sensitivity analysis for significant allocation choices.

7.3 Cut Off Rules

Inputs and outputs that contribute less than 1% of the total mass input or energy to the product system, and less than 1% to the total environmental impact in each impact category, may be excluded if the total excluded flows do not exceed 5% of the total impact in any category.

All hazardous and toxic material flows must be included in the inventory regardless of their mass or energy contribution.

7.4 Recycling and Waste Treatment Approaches

For waste treatment and recycling, the system boundary determines how these processes are handled. In a cradle-to-gate assessment, waste treatment during production is included, but end-of-life treatment is excluded. In cradle-to-grave assessments, all waste treatment and recycling processes must be included. For recycled content used as input, the environmental burden of the recycling process should be included, following the "polluter pays principle" or "100-0" allocation approach unless otherwise justified.

All calculation methods, allocation decisions, and cut-off rules applied must be clearly explained in the EPD. This transparency enables stakeholders to understand the methodological choices that influence the reported environmental impacts and supports meaningful comparisons between different chemical products.

8.0 KEY ENVIRONMENTAL INDICATORS

8.1 Impacts Categories and Units

Environmental Product Declarations for chemical products must report a comprehensive set of impact indicators that reflect the most significant environmental concerns associated with chemical production and use in accordance with EN 15804. These indicators must be calculated using internationally recognized characterization methods to ensure scientific validity and comparability.

8.2 Resource Use and Energy Indicator

In addition to these impact categories, EPDs must report resource use indicators including primary energy consumption (renewable and non-renewable, separated by energy and material resource use), secondary material use, renewable and non-renewable secondary fuels, and net freshwater consumption. Water use should be reported by source type (surface water, groundwater, etc.) when data is available. Energy indicators should be reported in both primary energy terms (MJ) and final energy terms (kWh) to facilitate different types of analyses.

8.3 Waste and Emissions Reporting

For chemical products, additional indicators related to waste generation, and emissions are particularly relevant. EPDs must report hazardous and non-hazardous waste (kg), particulate matter emissions (kg PM_{2.5}-eq.), and ecotoxicity indicators when relevant to the specific chemical. For

chemicals with significant aquatic toxicity potential, the USEtox characterization model should be applied to calculate freshwater ecotoxicity impacts.

- **Climate impacts:** Report greenhouse gas emissions using the latest IPCC Assessment Report factors, with both fossil and biogenic carbon clearly distinguished
- **Water impacts:** Consider both water consumption (volume) and water quality impacts through eutrophication and ecotoxicity indicator
- **Air pollution:** Address industrial emissions through acidification, photochemical oxidation, and particulate matter indicators.
- **Resource depletion:** Evaluate non-renewable resource consumption using Abiotic Depletion Potential for elements and fossil fuels

8.4 Indicator Calculation Requirements

All indicators must be calculated and reported for the declared unit of the chemical product. Results should be presented with appropriate significant figures reflecting the precision of the underlying data. Manufacturers are encouraged to provide context for the reported indicators, explaining the main contributors to each impact category and any initiatives undertaken to reduce these impacts.

9.0 CONTENT DECLARATION REQUIREMENTS

Transparency regarding chemical composition is a fundamental aspect of Environmental Product Declarations for chemical products. This PCR establishes comprehensive requirements for content declaration that balance the need for disclosure with protection of legitimate confidential business information. The content declaration enables stakeholders to make informed decisions about chemical products and supports hazard assessment, regulatory compliance, and circular economy initiatives.

9.1 Substance Disclosure Thresholds

All chemical substances present in the final product at concentrations exceeding 0.1% by mass must be declared in the EPD. This threshold aligns with regulatory frameworks such as REACH in the European Union and similar chemical management regulations globally. For substances listed as Substances of Very High Concern (SVHCs) under REACH or similar priority lists in other jurisdictions, the declaration threshold is 0.01% by mass. The declaration must include the chemical name, CAS number, and concentration range for each substance. For proprietary formulations, generic chemical descriptions may be used (e.g., "alkyl sulfonates" rather than specific molecular structures) provided they give sufficient information for hazard assessment.

9.2 Recycled and Renewable Content Reporting

For recycled content, the EPD must specify the type and percentage of pre-consumer and post-consumer recycled materials used in the product. If the chemical product contains renewable materials, the EPD must declare the percentage of renewable content on a mass basis and specify the biological source (e.g., "plant-based from corn"). For bio-based materials, information on sustainable sourcing certifications should be included when available.

9.3 Packaging Composition and Safety Levels

Packaging materials must also be declared in the EPD, including the type of packaging (e.g., steel drum, HDPE container), material composition, recycled content, and recyclability. If the packaging contains substances of concern at concentrations above 0.1%, these must be identified. For hazardous properties of both the chemical product and its packaging, the EPD must include relevant hazard classifications according to the Globally Harmonized System (GHS) or relevant regional regulations. This information should be consistent with the product's Safety Data Sheet (SDS).

9.4 Proprietary Formulations

When reporting composition data, manufacturers may use representative or average data for product groups with similar formulations. If a range is declared, the EPD must specify whether the environmental impact assessment is based on the worst-case formulation or an average composition. Any deviations from these content declaration requirements must be justified and documented in the EPD.

10.0 REPORTING AND DOCUMENTATION

Effective communication of environmental performance requires clear, consistent, and transparent reporting. This PCR establishes reporting requirements that ensure EPDs for chemical products are accessible to diverse stakeholders while maintaining scientific rigor. The reporting format should follow the EN 15804 template and ICIS General Program Instructions with modifications as needed to accommodate chemical sector-specific information.

10.1 EPD Report Structure

- Cover page with product identification and PCR reference
- Company information and contact details
- Product description and specification
- LCA methodology and system boundaries
- Environmental performance results
- Additional environmental information
- Content declaration
- References and verification statement

When reporting environmental performance results, the EPD must present impact indicators with appropriate significant figures and units. Results should be broken down by life cycle stage to provide transparency about where impacts occur. For cradle-to-gate EPDs, the report should include qualitative information about potential impacts in downstream stages not included in the quantitative assessment.

Additional environmental information relevant to the chemical product should be included, such as biodegradability, emissions during use, safe handling instructions, and end-of-life management recommendations. Any environmental certifications, eco-labels, or compliance with voluntary sustainability standards should also be reported. All claims about environmental benefits must be

specific, accurate, verifiable, and relevant to the product's environmental performance. Refer to ICIS General Program Instructions and EN 15804 for complete details.

10.2 Documentation Requirements

- Clear data sources and calculation methods
- Description of allocation procedures
- Explanation of assumptions and scenarios
- Sensitivity analysis for critical parameters
- Data quality assessment
- Uncertainty analysis
- Verification documentation

Documentation of the underlying LCA study is essential for credibility. The EPD must include or reference a technical report that documents data sources, calculation methodologies, allocation decisions, and assumptions. This documentation must be sufficient to enable reproducibility of results by third-party verifiers. For multi-component chemical products or product families, the EPD must clearly explain how representative products were selected and how results can be interpreted for specific variants.

10.3 Communication and Language Guidelines

- Use clear, simple language per ICIS style
- Avoid technical jargon when possible
- Include visual representations of key data
- Provide context for interpreting results
- Disclose limitations and uncertainties
- Include glossary of technical terms

The EPD must be written in clear, simple language following the ICIS style guidelines. Technical terms should be defined in a glossary, and complex concepts should be explained in accessible language. Visual elements such as graphs, charts, and diagrams should be used to enhance understanding of environmental performance data. The main report should be concise, with detailed technical information provided in annexes for interested stakeholders.

11.0 THIRD PARTY REVIEW AND VERIFICATION

Independent verification is a cornerstone of the EPD system, ensuring that environmental claims are credible, accurate, and based on sound methodological approaches. This PCR establishes rigorous verification requirements for chemical product EPDs, aligning with ISO 14025 and the International Climate Intelligence System's General Programme Instructions. The verification process serves to confirm that the EPD and its underlying LCA study comply with relevant standards, follow the specific requirements of this PCR, and accurately represent the environmental performance of the declared product.

11.1 Verifier Qualifications

All EPDs developed under this PCR must undergo third-party verification by an independent verifier with demonstrated expertise in LCA methodology, relevant environmental aspects of the chemical industry, and applicable standards and regulations. The verifier must be approved by the EPD program operator and must not have been involved in the execution of the LCA or the development of the EPD. For chemical products with complex supply chains or production processes, the verification team should include subject matter experts with specific knowledge of the relevant chemical technologies.

11.2 Review Scope and Procedures

The verification process includes a detailed review of the LCA study report, underlying data, calculation methods, and the draft EPD. Verifiers must confirm that the study follows the methodological requirements specified in this PCR, that appropriate data has been used, that calculations are accurate, and that the EPD accurately reflects the results of the LCA study. The verification must also ensure that the content declaration complies with the requirements specified in this PCR and that any additional environmental information is relevant and substantiated.

11.3 Verification Statement and Validity

Upon successful completion of the verification process, a verification statement must be included in the EPD. This statement must identify the verifier, confirm compliance with relevant standards and this PCR, and specify the date of verification. The verification is valid for a period of five years, after which the EPD must be reviewed and re-verified to ensure it continues to represent current production practices and environmental performance. If significant changes occur in the product, production process, or underlying data during this period, an earlier update and re-verification may be necessary.

11.4 Reverification and Updates

To ensure consistency in verification practices, verifiers are encouraged to use standardized checklists based on this PCR's requirements. Program operators should provide guidance and training to verifiers specific to chemical product EPDs to support high-quality verification processes across the industry.

12.0 PUBLIC DISCLOSURE AND TRANSPARENCY

12.1 Global Accessibility

Transparency is a fundamental principle of environmental declarations. This PCR establishes requirements for public disclosure that ensure stakeholders have access to relevant environmental information about chemical products. The PCR document itself and all EPDs developed under it must be publicly available without charge through the programme operator's website and, ideally, through the manufacturer's website as well. This accessibility enables customers, regulators,

researchers, and other interested parties to access and use the environmental information for decision-making purposes.

12.2 Language and Format

All EPDs must be published in English, which serves as the authoritative version. Translations into other languages are encouraged to facilitate global use, but in case of discrepancies, the English version takes precedence. Translated versions should be verified to ensure accurate representation of technical content. For global chemical manufacturers, region-specific annexes may be included in EPDs to address local regulatory requirements or market-specific information, provided these do not contradict the core EPD content.

The PCR and EPDs should be published in formats that facilitate data extraction and comparison, such as machine-readable formats in addition to human-readable documents. This supports the integration of EPD data into procurement systems, building information modeling (BIM) tools, and other digital platforms. Program operators are encouraged to develop databases that allow users to search and compare EPDs for different chemical products based on key parameters.

12.3 Stakeholder Engagement and Feedback

To ensure continuous improvement in environmental assessment and communication, this PCR encourages ongoing stakeholder engagement and regular updates. The PCR should be reviewed at least every five years to incorporate advances in scientific understanding, methodological developments, and industry practices. Program operators should establish clear mechanisms for stakeholders to provide feedback on the PCR and individual EPDs. Manufacturers are encouraged to update their EPDs when significant improvements in environmental performance are achieved, even if the five-year validity period has not expired.

Transparency extends beyond merely publishing documents to actively engaging with stakeholders about environmental performance. Chemical manufacturers are encouraged to use EPDs as part of broader sustainability communication strategies, providing context and explanation of the environmental information to help stakeholders understand its significance and how it relates to the company's sustainability goals and initiatives.

13.0 SUMMARY AND REFERENCES

PCR for Chemical Products provide a robust framework for assessing and communicating the environmental performance of chemical products throughout their life cycle. By establishing consistent methodologies, system boundaries, calculation rules, and reporting requirements, these PCRs enable credible environmental claims that facilitate market transparency and fair comparisons between products with equivalent functions.

The environmental assessment of chemical products presents unique challenges due to complex production processes, diverse applications, and potential impacts across multiple environmental categories. These PCRs address these challenges through specific guidance on allocation methods for multi-output processes, content declaration requirements that balance transparency with

business confidentiality and comprehensive environmental indicators that capture the most relevant impact categories for chemical products.

By following these PCRs, chemical manufacturers can develop Environmental Product Declarations that provide valuable information to customers, regulators, and other stakeholders. These EPDs support informed decision-making in procurement, product development, and policy formulation, driving continuous improvement in the environmental performance of the chemical industry. The standardized approach also reduces the burden on manufacturers by establishing clear rules that streamline the assessment process and avoid duplicative efforts.

- **References:** For the latest PCRs and updates, visit www.climateintell.com and ISO 14025, ISO 14040/44, and the International Climate Intelligence System General Program Instructions and EN 15804.

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