

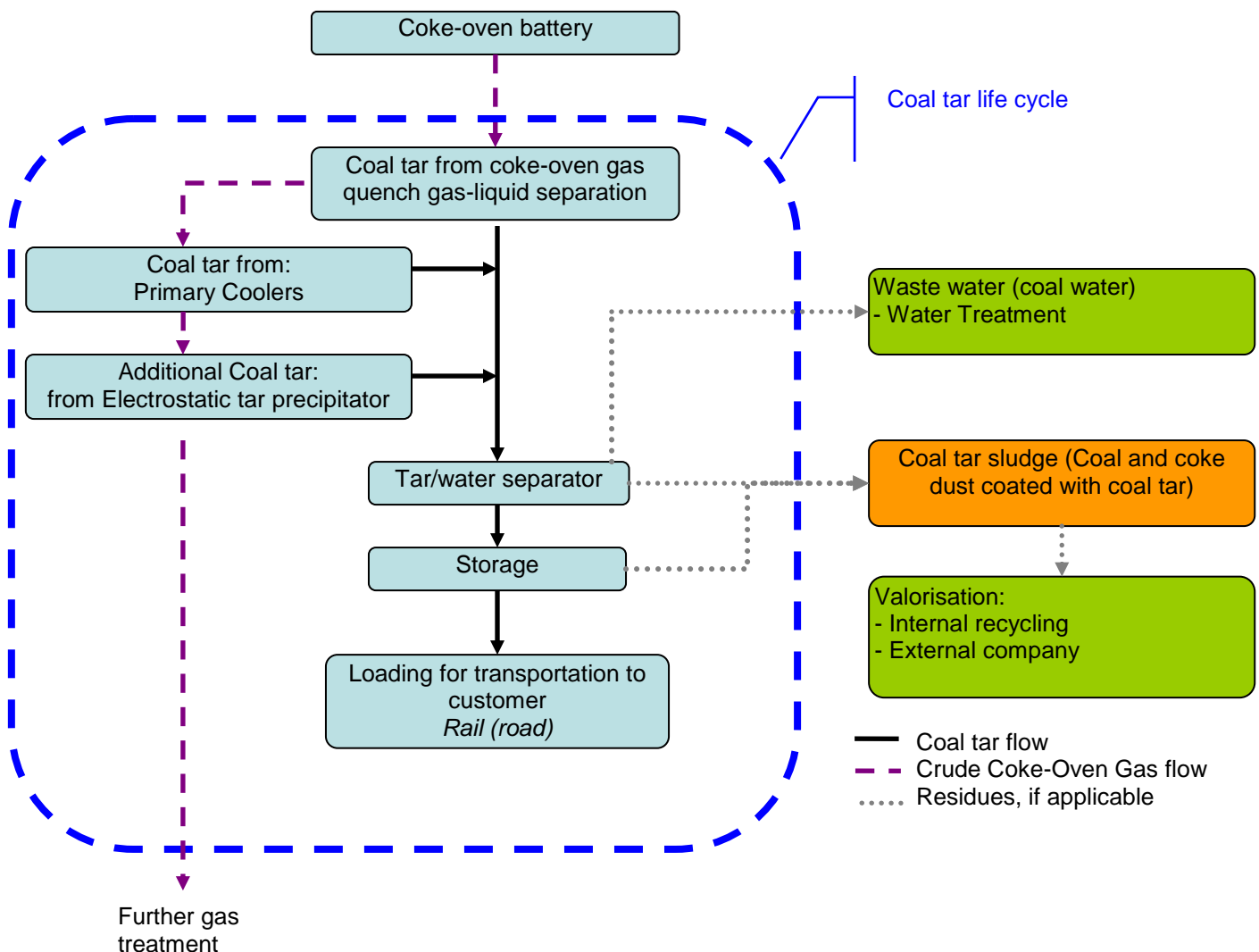
Risk Management Measures

Legal Entity: ISD Kokszoló Kft.
Site: ISD Kokszoló Kft.
Substance: Tar, coal, high-temp. CAS: 65996-89-6
Registration number: 01-2119511615-46-0053
Date: 15 December 2012

Information on risk management in a registration dossier of transported isolated intermediates

1. Brief description of technological process applied in manufacture of the intermediate

General scheme overview – Coal tar production



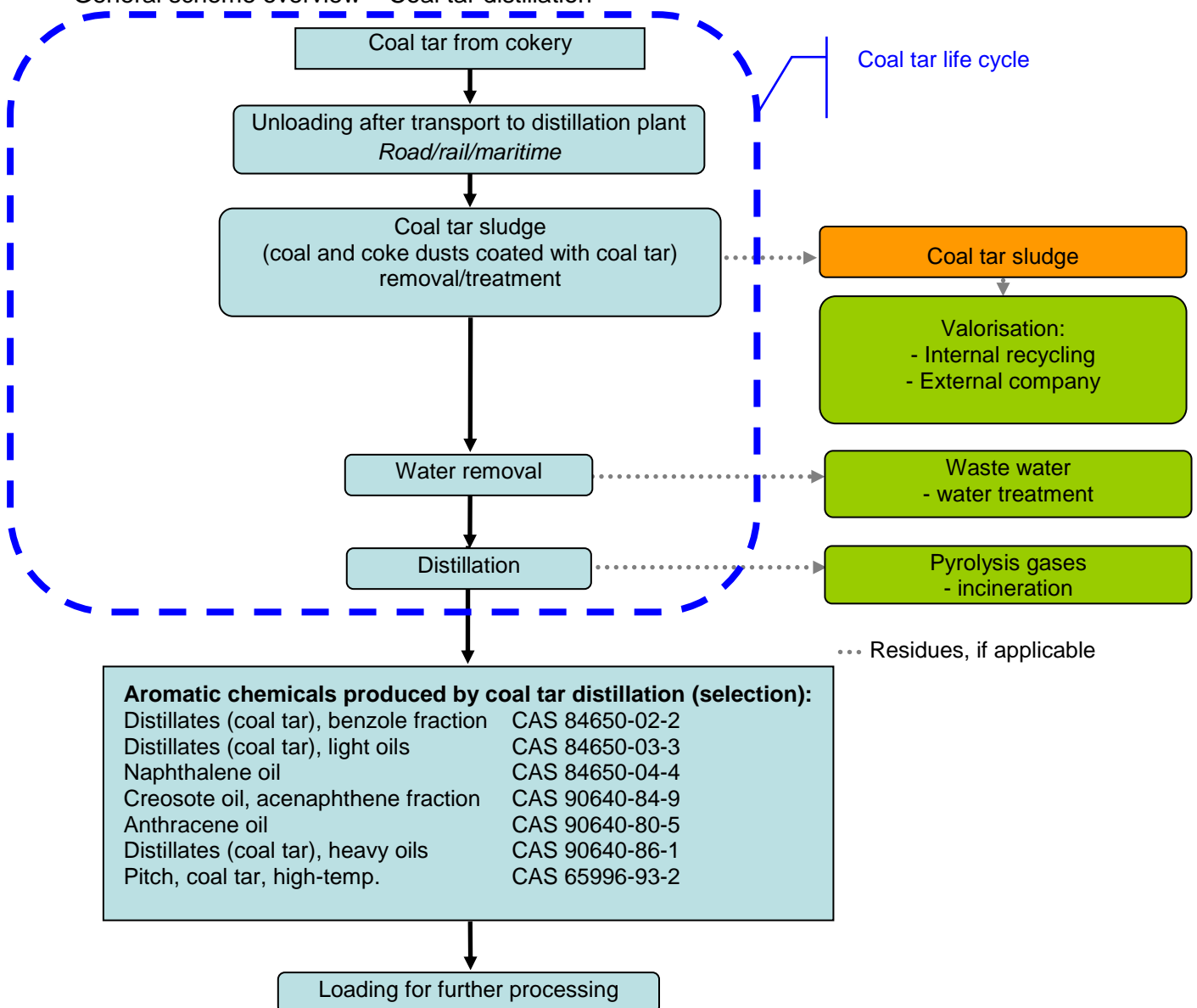
Description of the process according to the BREF:

Most of the water and the high-boiling point hydrocarbons are condensed during coke oven gas cooling. The condensate from the pipes and the electrostatic tar precipitator is led to the tar/water separator, where the tar is recovered [Best Available Techniques (BAT) Reference Document for Production of Iron and Steel - March 2012, Chapter 5. Coke oven plants]

2. Brief description of technological process applied in use of the intermediate

2.1. Brief description of technological process applied in use of the UVCB substance coal tar as raw material for the production (coal tar distillation) of several aromatic chemicals

General scheme overview – Coal tar distillation

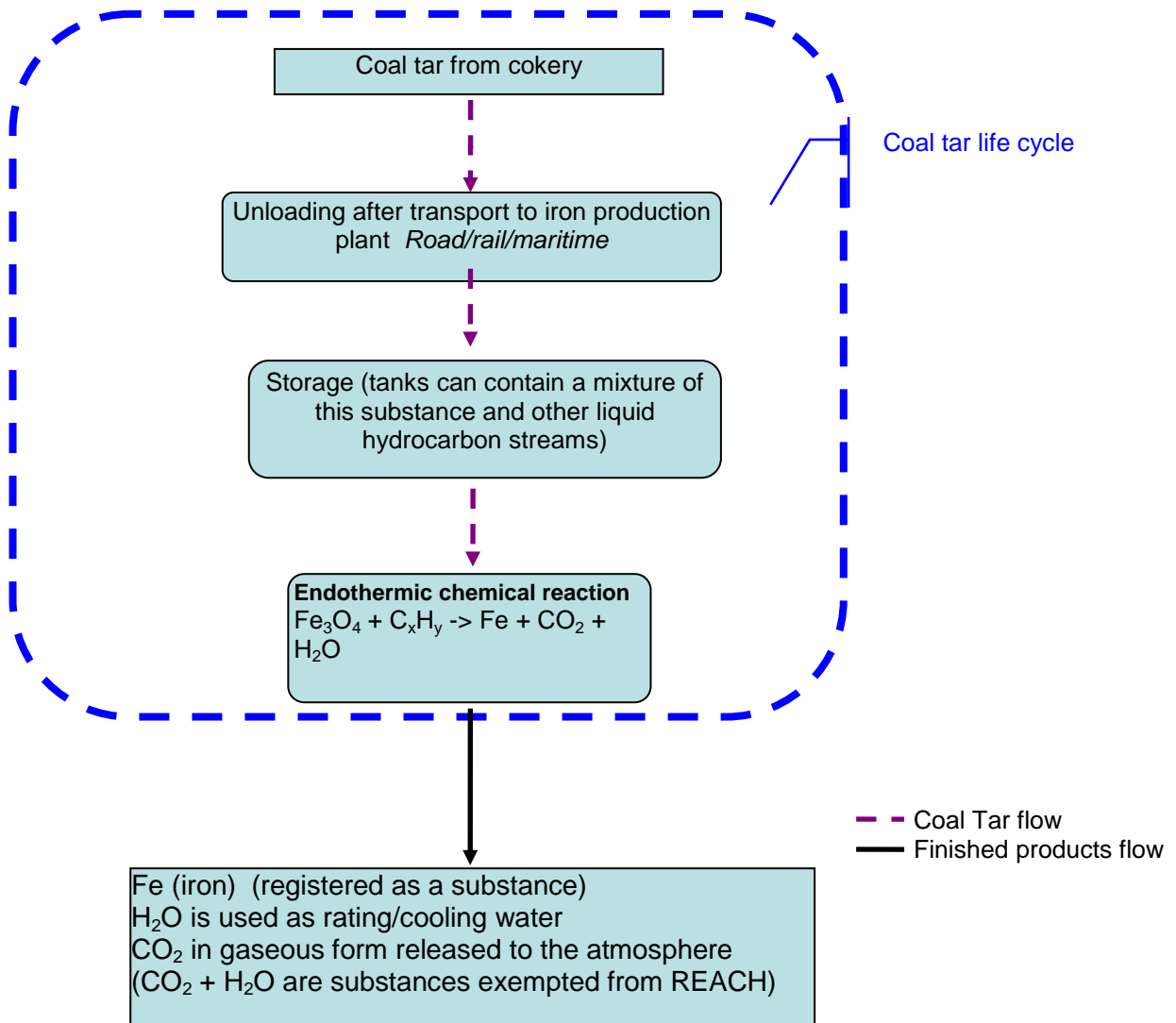


Description of coal tar distillation:

Coal tar is pumped into distillation units. Coal tar reacts when heated. The reaction mixture is separated according to its boiling point. The fractions are pumped into storage tanks and can either be marketed directly or can be used for further refining.

2.2. Brief description of technological process applied in use of the UVCB substance coal tar as reducing agent for iron production

General scheme overview – Coal tar use for iron production

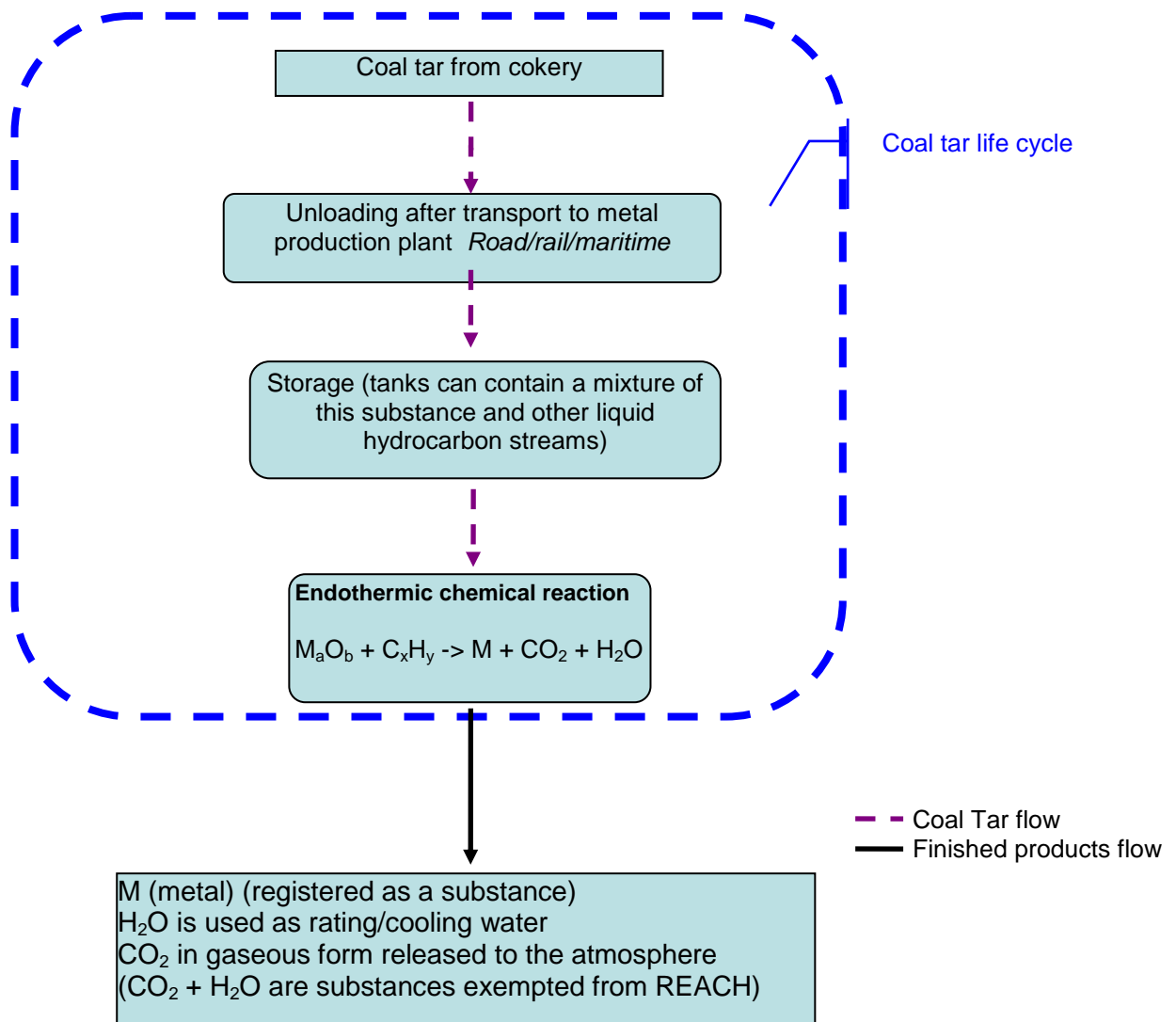


Description of the process:

Coal tar is pumped into blast furnace units. Coal tar reacts in the blast furnace. The iron is transferred into transport containers for further refining or solidified.

2.3. Brief description of technological process applied in use of the UVCB substance coal tar as reducing agent for metal production

General scheme overview – Coal tar use for metal production

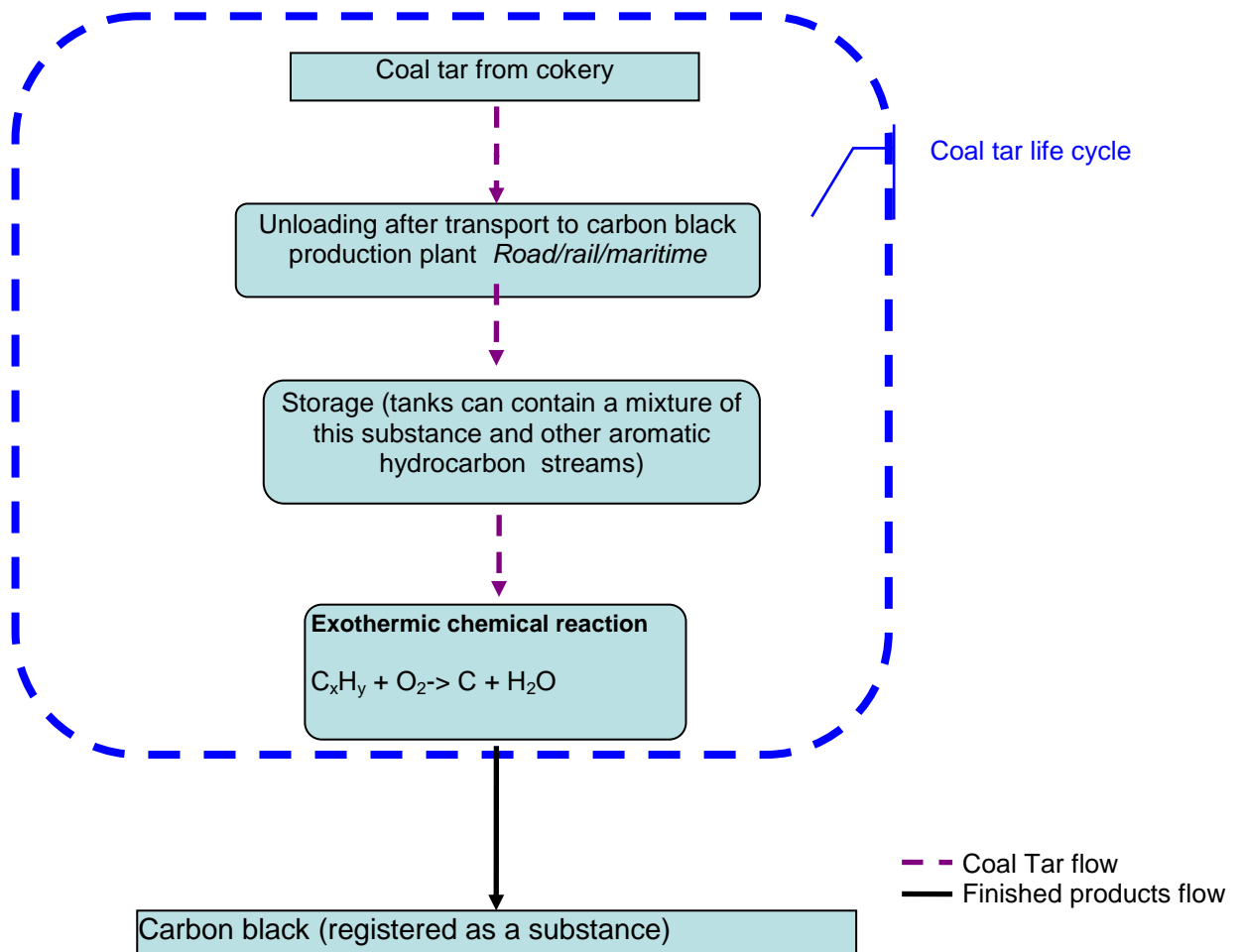


Description of the process:

Coal tar is pumped into furnace units. Coal tar reacts in the furnace. The metal is transferred into transport containers for further refining or solidified.

2.4. Brief description of technological process applied in use of the UVCB substance coal tar as feedstock for carbon black production

General scheme overview – manufacture of carbon black

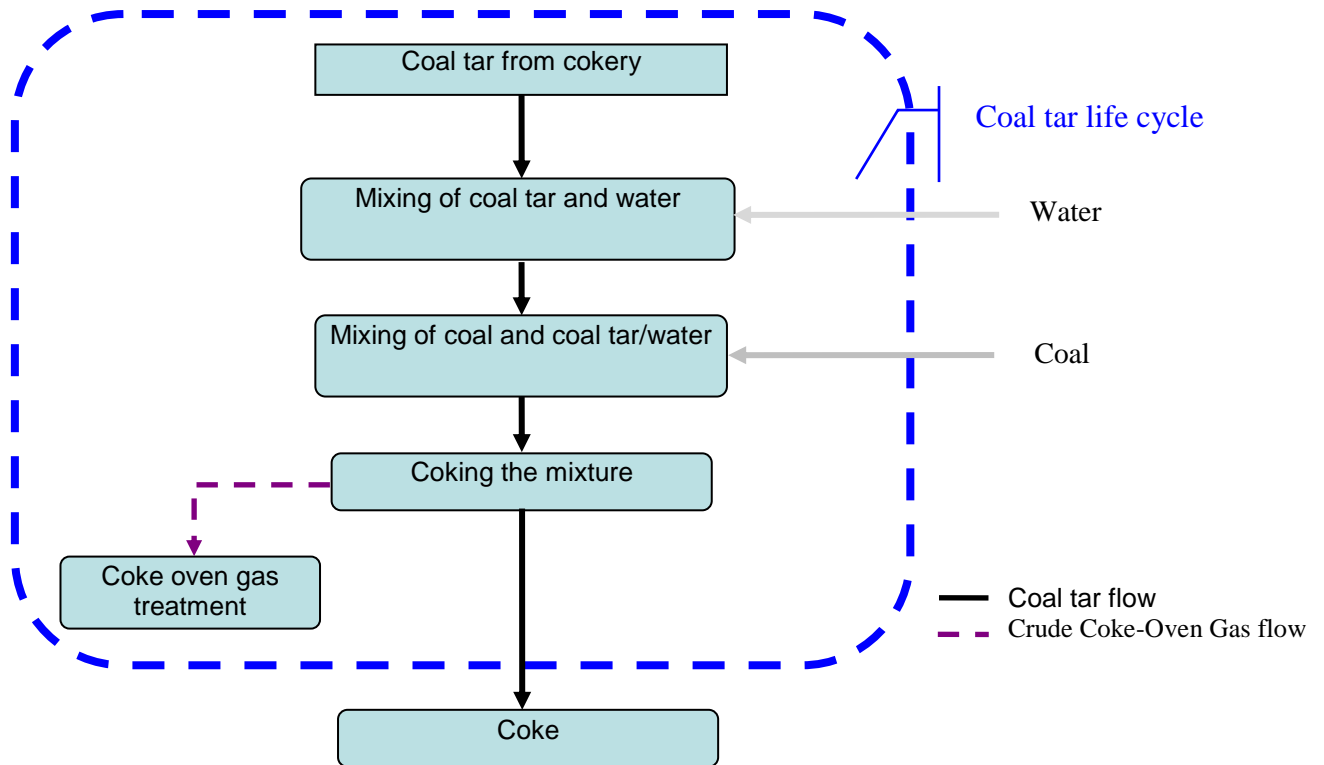


Description of the process:

Coal tar or a mixture of coal tar with other aromatic hydrocarbon oils is sprayed into a furnace to form carbon black (partial oxidation). The carbon black particles are cooled and collected for further handling. Generated energy (exothermic process) can be used for multiple purposes.

2.5. Brief description of technological process applied in use of the UVCB substance coal tar as agglomerating agent for coal particles and coking of the agglomerated particles for coke production

General scheme overview – Coal tar use for coke production



Description of the process:

Coal tar from the cokery is mixed with water and coal fines to agglomerate the coal fines. The mixture is coked as described in chapter 1.

3. Means of rigorous containment and minimisation technologies during the manufacturing and/or use process	
3.1. Means of rigorous containment and minimisation technologies during the manufacturing process of coal tar	
Type of information	Description
3.1.1.	<p>Description of technical means to rigorously contain the intermediate</p> <p>Coke-oven gas treatment and by-product processing consist of closed processes [Best Available Techniques (BAT) Reference Document for Production of Iron and Steel - March 2012, Chapter 5. Coke oven plants]</p>
3.1.2.	<p>Identification of residual emissions to workplace and environment</p> <ul style="list-style-type: none"> - Fugitive emissions may occur from leakages of, e.g pumps, valves, exhausters, pressure relief devices and losses during transfers [Best Available Techniques (BAT) Reference Document for Production of Iron and Steel - March 2012, Chapter 5. Coke oven plants] - Residual exposure during sampling (for analyses) and visual inspections - Air emissions: <ul style="list-style-type: none"> # Storage tanks # Process units # Loading/unloading
3.1.3.	<p>Description of procedural and control technologies in place to minimise emission and resulting exposure to workplace and to the environment</p> <ul style="list-style-type: none"> - Control of production process by trained operator - Follow-up of production parameters - Routine inspections for leaks to reduce fugitive emissions - Retention area under loading point - Presence of concrete floor - Draining systems - Retention tanks/concrete trays - Waste water treatment units: biological + decantation - Environmental emissions follow-up according to the IPPC permit - Occupational worker exposure follow-up (workplace measurements and biomonitoring) <ul style="list-style-type: none"> # Measurement plan according to local regulations # regular controls of workers by occupational medicine according to local regulations
3.1.4.	<p>Specify management means to ensure the rigorous containment and minimization of releases</p> <ul style="list-style-type: none"> - Standard Operational Procedures covering production, maintenance, samplings, cleaning, incidents, loading and accidents. These procedures include health, safety and environmental data. - A risk assessment according to local regulations is performed before any activities (periodical update) - Preventive maintenance according to maintenance plan <p>Other legislations/directives / certifications that may apply:</p> <ul style="list-style-type: none"> - Environmental Certification: e.g. ISO 14001 - Quality Certification : e.g. ISO 9001 - Health & Safety Certification: e.g. OHSAS 18001 - SEVESO directive (Directive 96/82/EC) - Directive 2008/1/EC concerning integrated pollution prevention and control - Directive 98/24/EC concerning the protection of the health and safety of workers from the risks related to chemical agents at work - Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work - Regulations on working with substances above flashpoint, e.g. ATEX 137 [1999/92/EC] and ATEX 95 [94/9/EC] - Work Equipment Directive 2009/104/EC on the minimum health

		<p>and safety requirements for the use of work equipment by workers at work.</p> <ul style="list-style-type: none"> - additional national regulations <p>Transportation regulations that may apply:</p> <ul style="list-style-type: none"> - Road transport: ADR, European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - Marine transport: IMO International Maritime Dangerous Good Code (IMDG) - Rail transport: RID Regulations concerning the International Carriage of Dangerous Goods by Rails - Maritime bulk transport (IMO-IBC) <p>Further information in the Guidance on Safe use and Safety Data Sheet.</p>
3.1.5	Specify the training that contributes to the functioning of the technical means	<ul style="list-style-type: none"> - Periodical training on Standard Operational Procedures - Periodical Training on the Hazards of the substance - List of authorized personal working on the lifecycle of the substance - Information on risk assessment performed on concerned workplaces
3.2. Means of rigorous containment and minimisation technologies during use for coal tar as raw material for the production (coal tar distillation) of several aromatic chemicals		
3.2.1.	Description of technical means to rigorously contain the intermediate	<p>After receiving the Coal tar by ship, truck or rail it is unloaded at dedicated loading stations through dedicated lines and is stored in dedicated tanks.</p> <p>Water and sediments can be removed by phase separation and/or mechanical treatment. Exhaust fumes are absorbed in scrubbing towers for recycling or collected for incineration. Coal tar is fed by pumping in distillation columns or vessels. After distillation the resulting fractions are again stored in storage tanks.</p>
3.2.2	Identification of residual emissions to workplace and environment	<ul style="list-style-type: none"> - Fugitive emissions may occur from leakages of, e.g. pumps, valves, exhausts, pressure relief devices and losses during transfers - Air emissions possible from: <ul style="list-style-type: none"> # Storage tanks # Process units # Unloading # Sampling # Maintenance
3.2.3	Description of procedural and control technologies in place to minimise emission and resulting exposure to workplace and to the environment	<ul style="list-style-type: none"> - Control of production process by trained operator - Follow-up of production parameters - Routine inspections for leaks to reduce fugitive emissions - Retention area under unloading point - Concrete floor under process units - Draining systems - Concrete dike or double wall storage tanks - Waste water pre-treatment: <ul style="list-style-type: none"> Mechanical cleaning (sand-filter) Sedimentation/ decantation - Environmental emissions follow-up according to the IPPC permit - Occupational worker exposure follow-up (workplace measurements and bio-monitoring): <ul style="list-style-type: none"> # Measurement plan according to local regulations # regular controls of workers by occupational medicine according to local regulations
3.2.4	Specify management means to ensure the rigorous containment and minimization of releases	<ul style="list-style-type: none"> - Standard Operational Procedures covering production, maintenance, samplings, cleaning, incidents, loading and accidents These procedures include health, safety and environmental data. - An Hazard Identification and Risk Assessment) is performed

		<p>before any activities (periodical update)</p> <ul style="list-style-type: none"> - Preventive maintenance according to maintenance plan <p>Other legislations/directives / certifications that may apply:</p> <ul style="list-style-type: none"> - Environmental Certification – ISO 14001 - Quality Certification – ISO 9001 - Health & Safety Certification – OHSAS 18001 - SEVESO directive nnn - Directive 2008/1/EC concerning integrated pollution prevention and control - Directive 98/24/EC concerning the protection of the health and safety of workers from the risks related to chemical agents at work - Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work - Regulations on working with substances above flashpoint, e.g. ATEX 137 [1999/92/EC] and ATEX 95 [94/9/EC] - Work Equipment Directive 2009/104/EC on the minimum health and safety requirements for the use of work equipment by workers at work; - Other national regulations <p>Transport regulations that may apply:</p> <ul style="list-style-type: none"> - Road transport: ADR, European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - Marine transport: IMO International Maritime Dangerous Good Code (IMDG) - Rail transport: RID Regulations concerning the International Carriage of Dangerous Goods by Rails - Maritime bulk transport (IMO-IBC) <p>Further information in the Guidance on Safe Use and Safety Data Sheet.</p>
3.2.5.	Specify the training that contributes to the functioning of the technical means	<ul style="list-style-type: none"> - Periodical training on Standard Operational Procedures - Periodical Training on the Hazards of the substance - List of authorized personal working on the whole lifecycle of the substance - Information on risk assessment performed on concerned workplaces
3.3. Means of rigorous containment and minimisation technologies during use of coal tar as reducing agent for iron production		
3.3.1.	Description of technical means to rigorously contain the intermediate	<p>After receiving the Coal tar by ship, truck or rail it is unloaded at dedicated loading stations through dedicated lines and is stored in dedicated tanks. Alternative is internal transfer though dedicated lines from the cokery.</p> <p>Water and sediments can be removed by phase separation and/or mechanical treatment. Exhaust fumes are absorbed in scrubbing towers for recycling or collected for incineration.</p> <p>Coal tar is fed by pumping into storage tanks and further into the blast furnace.</p>
3.3.2	Identification of residual emissions to workplace and environment	<ul style="list-style-type: none"> - Fugitive emissions may occur from leakages of, e.g. pumps, valves, exhausts, pressure relief devices and losses during transfers - Air emissions possible from: <ul style="list-style-type: none"> # Storage tanks # Process units (e.g. valves) # Unloading # Sampling # Maintenance
3.3.3	Description of procedural and control technologies in place to minimise emission and resulting exposure to workplace and to the environment	<ul style="list-style-type: none"> - Control of production process by trained operator - Continual Follow-up of production parameters - Routine inspections for leaks to reduce fugitive emissions - Retention area under unloading point

		<ul style="list-style-type: none"> - Concrete floor under process units - Draining systems - Concrete dike and/or double wall storage tanks - Occupational worker exposure follow-up (workplace measurements): <ul style="list-style-type: none"> # Measurement plan according to local regulations # regular controls of workers by occupational medicine according to local regulations
3.3.4	Specify management means to ensure the rigorous containment and minimization of releases	<ul style="list-style-type: none"> - Standard Operational Procedures covering production, maintenance, samplings, cleaning, incidents, loading, unloading and accidents <p>These procedures include health, safety and environmental data.</p> <ul style="list-style-type: none"> - An Hazard Identification and Risk Assessment is performed before any activities (periodical update) - Preventive maintenance according to maintenance plan <p>Legal compliance in regard to legislations / directives / regulations and other certifications like:</p> <ul style="list-style-type: none"> - Environmental Certification – e.g. ISO 14001 - Quality Certification – e.g. ISO 9001 - SEVESO-II directive (96/82/EC) - Directive 2008/1/EC concerning integrated pollution prevention and control - Directive 98/24/EC concerning the protection of the health and safety of workers from the risks related to chemical agents at work - Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work - Regulations on working with substances above flashpoint, e.g. ATEX 137 [1999/92/EC] and ATEX 95 [94/9/EC] - Work Equipment Directive 2009/104/EC on the minimum health and safety requirements for the use of work equipment by workers at work. - Other national regulations <p>Transport regulations that may apply:</p> <ul style="list-style-type: none"> - Road transport: ADR, European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - Marine transport: IMO International Maritime Dangerous Good Code (IMDG) - Rail transport: RID Regulations concerning the International Carriage of Dangerous Goods by Rails - Maritime bulk transport (IMO-IBC) <p>Further information in the Guidance on Safe Use and Safety Data Sheet.</p>
3.3.5.	Specify the training that contributes to the functioning of the technical means	<ul style="list-style-type: none"> - Periodical training on Standard Operational Procedures - Periodical Training on the Hazards of the substance - Only trained personal working on the whole lifecycle of the substance. - Information on risk assessment performed on concerned workplaces (e.g. work place evaluation, ...)

3.4. Means of rigorous containment and minimisation technologies during use of coal tar as reducing agent for metal production		
3.4.1.	Description of technical means to rigorously contain the intermediate	<p>After receiving the Coal tar by ship, truck or rail it is unloaded at dedicated loading stations through dedicated lines and is stored in dedicated tanks.</p> <p>Water and sediments can be removed by phase separation and/or mechanical treatment. Exhaust fumes are absorbed in scrubbing towers for recycling or collected for incineration.</p> <p>Coal tar is fed by pumping into storage tanks and further into the reduction furnace.</p>
3.4.2	Identification of residual emissions to workplace and environment	<ul style="list-style-type: none"> - Fugitive emissions may occur from leakages of, e.g. pumps, valves, exhausts, pressure relief devices and losses during transfers - Air emissions possible from: <ul style="list-style-type: none"> # Storage tanks # Process units (e.g. valves) # Unloading # Sampling # Maintenance
3.4.3	Description of procedural and control technologies in place to minimise emission and resulting exposure to workplace and to the environment	<ul style="list-style-type: none"> - Control of production process by trained operator - Continual Follow-up of production parameters - Routine inspections for leaks to reduce fugitive emissions - Retention area under unloading point - Concrete floor under process units - Draining systems - Concrete dike and/or double wall storage tanks - Occupational worker exposure follow-up (workplace measurements): <ul style="list-style-type: none"> # Measurement plan according to local regulations # regular controls of workers by occupational medicine according to local regulations
3.4.4	Specify management means to ensure the rigorous containment and minimization of releases	<ul style="list-style-type: none"> - Standard Operational Procedures covering production, maintenance, samplings, cleaning, incidents, loading, unloading and accidents <p>These procedures include health, safety and environmental data.</p> <ul style="list-style-type: none"> - An Hazard Identification and Risk Assessment is performed before any activities (periodical update) - Preventive maintenance according to maintenance plan <p>Legal compliance in regard to legislations / directives / regulations and other certifications that may apply:</p> <ul style="list-style-type: none"> - Environmental Certification – e.g. ISO 14001 - Quality Certification – e.g. ISO 9001 - SEVESO-II directive (96/82/EC) - Directive 2008/1/EC concerning integrated pollution prevention and control - Directive 98/24/EC concerning the protection of the health and safety of workers from the risks related to chemical agents at work - Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work - Regulations on working with substances above flashpoint, e.g. ATEX 137 [1999/92/EC] and ATEX 95 [94/9/EC] - Work Equipment Directive 2009/104/EC on the minimum health and safety requirements for the use of work equipment by workers at work. - Other national regulations <p>Transport regulations that may apply:</p> <ul style="list-style-type: none"> - Road transport: ADR, European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

		<ul style="list-style-type: none"> - Marine transport: IMO International Maritime Dangerous Good Code (IMDG) - Rail transport: RID Regulations concerning the International Carriage of Dangerous Goods by Rails - Maritime bulk transport (IMO-IBC) Further information in the Guidance on Safe Use and Safety Data Sheet.
3.4.5.	Specify the training that contributes to the functioning of the technical means	<ul style="list-style-type: none"> - Periodical training on Standard Operational Procedures - Periodical Training on the Hazards of the substance - Only trained personal working on the whole lifecycle of the substance. - Information on risk assessment performed on concerned workplaces (e.g. work place evaluation, ...)
3.5. Means of rigorous containment and minimisation technologies during use for coal tar as feedstock for carbon black production		
3.5.1.	Description of technical means to rigorously contain the intermediate	After receiving the Coal tar by ship, truck or rail it is unloaded at dedicated loading stations through dedicated lines and is stored in dedicated tanks. Coal tar is fed by pumping through dedicated lines into the carbon black furnace.
3.5.2	Identification of residual emissions to workplace and environment	<ul style="list-style-type: none"> - Fugitive emissions may occur from leakages of, e.g. pumps, valves, exhausts, pressure relief devices and losses during transfers - Air emissions possible from: <ul style="list-style-type: none"> # Storage tanks # Process units (e.g. valves) # Unloading # Sampling # Maintenance
3.5.3	Description of procedural and control technologies in place to minimise emission and resulting exposure to workplace and to the environment	<ul style="list-style-type: none"> - Control of production process by trained operator - Continual Follow-up of production parameters - Routine inspections for leaks to reduce fugitive emissions - Retention area under unloading point - Concrete floor under process units - Draining systems - Concrete dike and/or double wall storage tanks - Occupational worker exposure follow-up (workplace measurements): <ul style="list-style-type: none"> # Measurement plan according to local regulations # regular controls of workers by occupational medicine according to local regulations
3.5.4	Specify management means to ensure the rigorous containment and minimization of releases	<ul style="list-style-type: none"> - Standard Operational Procedures covering production, maintenance, samplings, cleaning, incidents, loading, unloading and accidents These procedures include health, safety and environmental data. <ul style="list-style-type: none"> - An Hazard Identification and Risk Assessment is performed before any activities (periodical update) - Preventive maintenance according to maintenance plan Legal compliance in regard to legislations / directives / regulations and other certifications that may apply: <ul style="list-style-type: none"> - Environmental Certification – e.g. ISO 14001 - Quality Certification – e.g. ISO 9001 - SEVESO-II directive (96/82/EC) - Directive 2008/1/EC concerning integrated pollution prevention and control - Directive 98/24/EC concerning the protection of the health and safety of workers from the risks related to chemical agents at work - Directive 2004/37/EC on the protection of workers from the risks

		<p>related to exposure to carcinogens or mutagens at work</p> <ul style="list-style-type: none"> - Regulations on working with substances above flashpoint, e.g. ATEX 137 [1999/92/EC] and ATEX 95 [94/9/EC] - Work Equipment Directive 2009/104/EC on the minimum health and safety requirements for the use of work equipment by workers at work. - Other national regulations <p>Transport regulations that may apply:</p> <ul style="list-style-type: none"> - Road transport: ADR, European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - Marine transport: IMO International Maritime Dangerous Good Code (IMDG) - Rail transport: RID Regulations concerning the International Carriage of Dangerous Goods by Rails - Maritime bulk transport (IMO-IBC) <p>Further information in the Guidance on Safe Use and Safety Data Sheet.</p>
3.5.5.	Specify the training that contributes to the functioning of the technical means	<ul style="list-style-type: none"> - Periodical training on Standard Operational Procedures - Periodical Training on the Hazards of the substance - Only trained personal working on the whole lifecycle of the substance. - Information on risk assessment performed on concerned workplaces (e.g. work place evaluation etc)
3.6. Means of rigorous containment and minimisation technologies during use of coal tar as agglomerating agent for coal particles and coking of the agglomerated particles for coke production		
3.6.1.	Description of technical means to rigorously contain the intermediate	<p>Coal tar must be pumped through dedicated lines from by-products recovering plant to hermetic tanks (mixer) for preparation of agglomeration agent. According to new BAT.</p> <p>Transport and loading systems of mixture coal and coal tar to coal tower and charging machine have to be equipped in exhaust ventilating system.</p>
3.6.2	Identification of residual emissions to workplace and environment	<ul style="list-style-type: none"> - Fugitive emissions may occur from leakages of, e.g. pumps, valves, exhausts, pressure relief devices and losses during transfers - Air emissions possible from: <ul style="list-style-type: none"> # operation tanks and mixers # transport and loading systems # charging of coke chamber # maintenance
3.6.3	Description of procedural and control technologies in place to minimise emission and resulting exposure to workplace and to the environment	<ul style="list-style-type: none"> - Control of production process by trained operator - Online follow-up of production parameters - Routine inspections for leaks to reduce fugitive emissions - Retention area under unloading point to recover leakage - Concrete floor under process units - Draining systems - Concrete dike or double wall storage tanks - Environmental emissions follow-up according to the IPPC permit - Occupational worker exposure follow-up (workplace measurements and bio-monitoring): <ul style="list-style-type: none"> # Measurement plan according to local regulations # regular controls of workers by occupational medicine according to local regulations
3.6.4.	Specify management means to ensure the rigorous containment and minimization of releases	<ul style="list-style-type: none"> - Standard Operational Procedures covering production, maintenance, samplings, cleaning, incidents, loading and accidents <p>These procedures include health, safety and environmental data.</p> <ul style="list-style-type: none"> - An Hazard Identification and Risk Assessment (HIRA) is performed before any activities (periodical update) - Preventive maintenance according to maintenance plan <p>Other legislations/directives / certifications that may apply:</p>

		<ul style="list-style-type: none"> - Environmental Certification – ISO 14001 - Quality Certification – ISO 9001 - Health & Safety Certification – OHSAS 18001 - SEVESO directive - ATAX Directive 94/9/WE - Directive 2008/1/EC concerning integrated pollution prevention and control - Directive 98/24/EC concerning the protection of the health and safety of workers from the risks related to chemical agents at work - Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work - Other national regulations <p>Further information in the Guidance on Safe use and Safety Data Sheet.</p>
3.6.5.	Specify the training that contributes to the functioning of the technical means	<ul style="list-style-type: none"> - Periodical training on Standard Operational Procedures - Periodical Training on the Hazards of the substance - List of authorized personal working on the whole lifecycle of the substance - Information on risk assessment performed on concerned workplaces

4. Special procedures applied before cleaning and maintenance	
Type of information	Description
Description of special procedures applied before entering the system	<ul style="list-style-type: none"> - Internal standard on confined spaces - Purging, flushing, venting procedures to prepare the unit before intrusive maintenance - Only authorized worker (permit to work) can have access to enter a unit <p>A risk assessment according to local regulations is performed before any activities (periodical update) and operational procedures associated to the activity</p>
5. Describe activity and type of control measures to be used in case of accidents, incidents, maintenance and cleaning activities	
Accident/incident/maintenance/cleaning works	<ul style="list-style-type: none"> - Emergency plan instructions for accidents & incidents. (including controls and PPEs to be worn) - Soil containment: Spread absorbent material in case of spillage, recycled internally <p>A risk assessment according to local regulations is performed before any intervention. This analysis lists all control measures (including general ventilation, PPE...). All new situations (incident, accident, maintenance...) are used to update the risk assessment.</p>
6. Waste information	
Process stage where waste are generated Brief description of on-site treatments	There is no final waste. All residues are recycled.

This document was prepared by R4CC in 2012 according to ECHA recommendation (Ref.: ECHA-2010-G-17-EN) complying with Community law (Ref.: 1907/2006/EC), details have been included in the registration dossier (section 13: Assessment reports).