

Tall Oil products

Distilled Tall Oil (DTO)

Tall Oil Fatty Acid (TOFA)

Tall Oil Pitch Fuel

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Tall Oil Rosin (TOR)

Rosin Pulp

Crude Tall Oil (CTO)

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UCY10
Product Datasheet
Item number: 10-004

General Information

UCY10 is Distilled Tall Oil (DTO) product with a special combination of fatty and rosin acids.
UCY10 is an excellent raw material in various applications.

Specification of UCY10

Analysis	Value	Method
Colour Gardner, photometer	max. 6,5	ASTM D 6166-97
Free rosin acids, %	9 - 11	SCAN-T 14:78

Typical analyses of UCY10

Analysis	Value	Method
Acid value	194	SCAN-T 11:72
Cloud point, °C	2	ASTM D 2500-99
Colour Gardner, photometer	4.5	ASTM D 6199-97
Density at 20 °C, kg/m³	920	SCAN-T 2:65
Flash point, closed cup, °C	200	ASTM D 93-00
Free fatty acids, %	87	ASTM D 5974-00
Free rosin acids, %	10	SCAN-T 14:78
Pour point, °C	-7	SCAN-T 5:67
Refractive index at 20 °C	1,478	SCAN-T 1:65
Saponification value	196	SCAN-T 12:72
Unsaponifiables, %	3	SCAN-T 13:74
Viscosity at 20 °C, mPas	50	ASTM D 2196-99

Product handling

UCY10 should be delivered at around 50 ℃ and the recommended minimum storage temperature is 40 ℃. If **UCY10** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation or crystallization. This is a normal characteristic and not a defect. If affected, the material should be gently heated to around 75 ℃ and circulated or agitated to restore the clear and bright condition.

Delivery form

Preferably bulk liquid in road tanker, rail tank wagon, ISO-container. Delivery in flexitanks, steel drums and IBCs is possible subject to product handling considerations above.

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UCY15
Product Datasheet
Item number: 10-011

General Information

UCY15 is a special Distilled Tall Oil (DTO) product with a special combination of fatty and rosin acids.
UCY15 is an excellent raw material in various applications. For example it can be used in metal working fluids, oil field chemicals, soaps, cleaners and alkyd resins.

Specification of UCY15

Analysis	Value	Method
Colour Gardner, photometer	max. 6.5	ASTM D 6166-97
Free rosin acids, %	14 - 16	SCAN-T 14:78

Typical analyses of UCY15

Analysis	Value	Method
Acid value	192	SCAN-T 11:72
Cloud point, °C	2	ASTM D 2500-99
Colour Gardner, photometer	4.7	ASTM D 6199-97
Density at 20 °C, kg/m³	925	SCAN-T 2:65
Flash point, closed cup, °C	200	ASTM D 93-00
Free fatty acids, %	82	ASTM D 5974-00
Free rosin acids, %	15	SCAN-T 14:78
Pour point, °C	-7	SCAN-T 5:67
Refractive index at 20 °C	1.480	SCAN-T 1:65
Saponification value	196	SCAN-T 12:72
Unsaponifiables, %	3	SCAN-T 13:74
Viscosity at 20 °C, mPas	60	ASTM D 2196-99

Product handling

UCY15 should be delivered at around 50 °C and the recommended minimum storage temperature is 40 °C. If **UCY15** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation or crystallization. This is a normal characteristic and not a defect. If affected, the material should be gently heated to around 75 °C and circulated or agitated to restore the clear and bright condition.

Delivery form

Preferably bulk liquid in road tanker, rail tank wagon, ISO-container. Delivery in flexitanks, steel drums and IBCs is possible subject to product handling considerations above.

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UCY20
Product Datasheet
Item number: 10-012

General Information

UCY20 is a special Distilled Tall Oil (DTO) product with a special combination of fatty and rosin acids.
UCY20 is an excellent raw material in various applications. For example it can be used in metal working fluids, oil field chemicals, soaps, cleaners and alkyd resins.

Specification of UCY20

Analysis	Value	Method
Colour Gardner, photometer	max. 6.5	ASTM D 6166-97
Free rosin acids, %	19 - 21	SCAN-T 14:78

Typical analyses of UCY20

Analysis	Value	Method
Acid value	190	SCAN-T 11:72
Cloud point, °C	5	ASTM D 2500-99
Colour Gardner, photometer	4.5	ASTM D 6199-97
Density at 20 °C, kg/m³	930	SCAN-T 2:65
Flash point, closed cup, °C	200	ASTM D 93-00
Free fatty acids, %	76	ASTM D 5974-00
Free rosin acids, %	20	SCAN-T 14:78
Pour point, °C	-5	SCAN-T 5:67
Refractive index at 20 °C	1.484	SCAN-T 1:65
Saponification value	194	SCAN-T 12:72
Unsaponifiables, %	3	SCAN-T 13:74
Viscosity at 20 °C, mPas	70	ASTM D 2196-99

Product handling

UCY20 should be delivered at around 50 ℃ and the recommended minimum storage temperature is 40 ℃. If **UCY20** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation or crystallization. This is a normal characteristic and not a defect. If affected, the material should be gently heated to around 75 ℃ and circulated or agitated to restore the clear and bright condition.

Delivery form

Preferably bulk liquid in road tanker, rail tank wagon, ISO-container. Delivery in flexitanks, steel drums and IBCs is possible subject to product handling considerations above.

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UCY20-25
Product Datasheet
Item number: 10-009

General Information

UCY20-25 is a special Distilled Tall Oil (DTO) product with a special combination of fatty and rosin acids.
UCY20-25 is an excellent raw material in various applications. For example it can be used in metal working fluids, oil field chemicals, soaps, cleaners and alkyd resins.

Specification of UCY20-25

Analysis	Value	Method
Colour Gardner, photometer	max. 6.5	ASTM D 6166-97
Free rosin acids, %	20-25	SCAN-T 14:78

Typical analyses of UCY20-25

Analysis	Value	Method
Acid value	192	SCAN-T 11:72
Cloud point, °C	5	ASTM D 2500-99
Colour Gardner, photometer	4.5	ASTM D 6199-97
Density at 20 °C, kg/m³	930	SCAN-T 2:65
Flash point, closed cup, °C	200	ASTM D 93-00
Free fatty acids, %	75	ASTM D 5974-00
Free rosin acids, %	22	SCAN-T 14:78
Pour point, °C	-5	SCAN-T 5:67
Refractive index at 20 °C	1,485	SCAN-T 1:65
Saponification value	194	SCAN-T 12:72
Unsaponifiables, %	3	SCAN-T 13:74
Viscosity at 20 °C, mPas	80	ASTM D 2196-99

Product handling

UCY20-25 should be delivered at around 50 ℃ and the recommended minimum storage temperature is 40 ℃. If **UCY25-25** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation or crystallization. This is a normal characteristic and not a defect. If affected, the material should be gently heated to around 75 ℃ and circulated or agitated to restore the clear and bright condition.

Delivery form

Preferably bulk liquid in road tanker, rail tank wagon, ISO-container. Delivery in flexitanks, steel drums and IBCs is possible subject to product handling considerations above.

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UCY25-30
Product Datasheet
Item number: 10-005

General Information

UCY25-30 is a special Distilled Tall Oil (DTO) product with a special combination of fatty and rosin acids.
UCY25-30 is an excellent raw material in various applications. For example it can be used in metal working fluids, oil field chemicals, soaps, cleaners and alkyd resins.

Specification of UCY25-30

Analysis	Value	Method
Colour Gardner, photometer	max. 7	ASTM D 6166-97
Free rosin acids, %	25-30	SCAN-T 14:78

Typical analyses of UCY25-30

Analysis	Value	Method
Acid value	188	SCAN-T 11:72
Cloud point, °C	8	ASTM D 2500-99
Colour Gardner, photometer	4.5	ASTM D 6199-97
Density at 20 °C, kg/m³	945	SCAN-T 2:65
Flash point, closed cup, °C	200	ASTM D 93-00
Free fatty acids, %	70	ASTM D 5974-00
Free rosin acids, %	27.5	SCAN-T 14:78
Pour point, °C	0	SCAN-T 5:67
Refractive index n_D at 20 °C	1,490	SCAN-T 1:65
Saponification value	192	SCAN-T 12:72
Unsaponifiables, %	3	SCAN-T 13:74
Viscosity at 20 °C, mPa.s	85	ASTM D 2196-99

Product handling

UCY25-30 should be delivered at around 50 °C and the recommended minimum storage temperature is 40 °C. If **UCY25-30** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation or crystallization. This is a normal characteristic and not a defect. If affected, the material should be gently heated to around 75 °C and circulated or agitated to restore the clear and bright condition.

Delivery form

Preferably bulk liquid in road tanker, rail tank wagon, ISO-container. Delivery in flexitanks, steel drums and IBCs is possible subject to product handling considerations above.

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UCY30-40
Product Datasheet
Item number: 10-013

General Information

UCY30-40 is a special Distilled Tall Oil (DTO) product with a special combination of fatty and rosin acids.
UCY30-40 is an excellent raw material in various applications. For example it can be used in metal working fluids, oil field chemicals, soaps, cleaners and alkyd resins.

Specification of UCY30-40

Analysis	Value	Method
Colour Gardner, photometer	max. 10	ASTM D 6166-97
Free rosin acids, %	30 – 40	SCAN-T 14:78
Usaponifiables, %	7	SCAN-T 13:74

Typical analyses of UCY30-40

Analysis	Value	Method
Acid value	187	SCAN-T 11:72
Cloud point, °C	6	ASTM D 2500-99
Colour Gardner, photometer	7	ASTM D 6199-97
Density at 20 °C, kg/m³	955	SCAN-T 2:65
Flash point, closed cup, °C	200	ASTM D 93-00
Free fatty acids, %	59	ASTM D 5974-00
Free rosin acids, %	33	SCAN-T 14:78
Pour point, °C	-5	SCAN-T 5:67
Refractive index at 20 °C	1.497	SCAN-T 1:65
Saponification value	190	SCAN-T 12:72
Unsaponifiables, %	5	SCAN-T 13:74
Viscosity at 20 °C, mPas	200	ASTM D 2196-99

Product handling

UCY30-40 should be delivered at around 50 °C and the recommended minimum storage temperature is 40 °C. If **UCY30-40** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation or crystallization. This is a normal characteristic and not a defect. If affected, the material should be gently heated to around 75 °C and circulated or agitated to restore the clear and bright condition.

Delivery form

Preferably bulk liquid in road tanker, rail tank wagon, ISO-container. Delivery in flexitanks, steel drums and IBCs is possible subject to product handling considerations above.

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UCY-TF2
Product Datasheet
Item number: 10-006

General Information

UCY-TF2 is characterized as a tall oil fatty acid (TOFA) with high fatty acid content and low content of rosin acids and unsaponifiables. The light colour together with excellent colour stability and air drying propeties are derived from its origin, the northern pine.

The superior chemical reactivity of **UCY-TF2** is due to its long carbon chain (C18), the acid function of carboxyl group (-COOH) and the unsaturation of the double bonds. That is why **UCY-TF2** is an excellent raw material for alkyd resins, dimer acids, fa-esters, fa-soaps, faethoxylates, fa-amines and many other chemicals.

Specification of UCY-TF2

Analysis	Value	Method
Acid value	min. 193	SCAN-T 11:72
Colour Gardner, photometer	max. 5	ASTM D 6166-97
Free rosin acids, %	max. 2,1	SCAN-T 14:78
Unsaponifiables, %	max. 2	SCAN-T 13:74

Typical analyses of UCY-TF2

Analysis	Value	Method
Acid value	195	SCAN-T 11:72
Cloud point, °C	-1	ASTM D 2500-99
Colour Gardner, photometer	4	ASTM D 6199-97
Density at 20 °C, kg/m³	904	SCAN-T 2:65
Flash point, closed cup, °C	205	ASTM D 93-00
Free fatty acids, %	96	ASTM D 5974-00
Free rosin acids, %	1.9	SCAN-T 14:78
Iodine value, Wijs	153	ASTM D 5768-95
Pour point, °C	-12	SCAN-T 5:67
Saponification value	198	SCAN-T 12:72
Unsaponifiables, %	1.9	SCAN-T 13:74
Viscosity at 20 °C, mPas.s	30	ASTM D 2196-99

Product handling

UCY-TF2 should be delivered at around 20 ℃ and the recommended minimum storage temperature is 15 ℃. If **UCY-TF2** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation. This is a normal characteristic and not a defect. If affected, the material should be gently heated to max. 30 ℃ and circulated or agitated to restore the clear and bright condition.

Delivery form

Liquid in road tanker, rail tank wagon, ISO-container, flexitank, IBC-container or 188 kgs net in steel drums.

Disclaimer:
In all applications of **UCY-TF2** it is the sole responsibility of the buyer to respect and comply with any valid intellectual property rights of third parties.

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UCY-TF2-U

Product Datasheet

Item number: 10-007

General Information

UCY-TF2-U is a tall oil fatty acid (TOFA) with a high fatty acid content and a low content of rosin acids and unsaponifiables. **UCY-TF2-U** provides a combination of light colour, very good colour stability and airdrying properties.

The utility of **UCY-TF2-U** can be found in the long carbon chain (C18), the acid function of carboxyl group (COOH) and the unsaturation of the double bonds. For these reasons **UCY-TF2-U** has found use in different areas, e.g. alkyd resins, dimer acids, surfactants, cleaners, oil field chemicals and other chemical derivatives.

Specification of UCY-TF2-U

Analysis	**Value**
Acid value	min. 193
Colour Gardner, photometer	max. 5
Free rosin acids, %	max. 2.1
Unsaponifiables, %	max. 2.5

Typical analyses of UCY-TF2-U

Analysis		**Value**
Colour Gardner, photometer		4.5
Acid value		194
Saponification value		196
Iodine Value, Wijs		155
Cloud point, °C		-1
Pour point, °C		-8
Flash point, open cup, °C		205
Viscosity at 20°C, mPa.s (cP)		30
Density at 20°C, kg / m³		905
Saturated fatty acids		3
Oleic acid		29
Linoleic acid and other	Non-conjugated	57
Polyunsatured acids	conjugated	7
Free fatty acids		96
Free rosin acids		1.8
Unsaponifiables		2

Delivery from and product handling

Available in rail tank wagon, road tank wagon, flexitank and drums of 193 kg net.

Delivery / storage temperature typical 10-30°C.

If precipitations occur, it does not affect the use of the product as chemical raw material. Slightly heating to about 40°C dissolves the precipitated material.

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UCY-TF5
Product Datasheet
Item number: 10-017

General Information

UCY-TF5 is a Tall Oil Fatty Acid (TOFA) product with a special combination of fatty and rosin acids.

UCY-TF5 is an excellent raw material in various applications. For example it be used in metal working fluids, oil field chemicals, soaps, cleaners and alkyd resins.

Specification of UCY-TF5

Analysis	Value	Method
Colour Gardner, photometer	max. 6	ASTM D 6166-97
Free rosin acids, %	max. 6	SCAN-T 14:78
Unsaponifiables, %	max. 4	SCAN-T 13:74

Typical analyses of UCY-TF2

Analysis	Value	Method
Acid value	194	SCAN-T 11:72
Colour Gardner, photometer	4.5	ASTM D 6199-97
Free fatty acids, %	70	ASTM D 5974-00
Free rosin acids, %	5	SCAN-T 14:78
Unsaponifiables, %	3	SCAN-T 13:74

Product handling

UCY-TF5 should be delivered at around 20 ℃ and the recommended minimum storage temperature is 15 ℃. If **UCY-TF5** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation. This is a normal characteristic and not a defect. If affected, the material should be gently heated to max. 30 ℃ and circulated or agitated to restore the clear and bright condition.

Delivery form

Liquid in road tanker, rail tank wagon, ISO-container, flexitank, IBC-container or 188 kgs net in steel drums.

Disclaimer:
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Tall Oil 1 (tall oil pitch based bio fuel)
Product Datasheet
Item number: 10-001

Description

Pitch fuel made from tall oil pitch and other monomer tall oil destillates

General Information, storing and delivery form

General information:
The liquid bio fuel Tall Oil 1 was selected as a case product for the assessment. Tall Oil 1 replaces heavy fuel oil in customers' processes. Replacement of heavy fuel oil by Tall Oil 1 in customer processes enables annual emission savings which are 125 fold compared with emissions due to production of Tall Oil 1 from tall oil.

Beside the usage as bio fuel Tall Oil 1 is used as a raw material for the chemical and the construction industry.

Storing:
We recommend storing in tanks with a temperature of min. 60 ℃.

Delivery form:
Deliveries in bulk form by truck and ocean vessel. The delivery temperature usually is around 70 ℃.

Specification of Tall Oil 1

Analysis	Value	Method
Viscosity at 50 °C, mPa.s	max. 600	ASTM D2196-9 9
Acid value, mg KOH/g	max. 100	ASTM D 465-01
Ash, %	max. 0.5	SCAN T 4:66
Sulphur, %	max. 0.4	SCAN D 4239-00
Moisture, %	max. 0.5	ASTM D 1364-95

Typical analyses of Tall Oil 1

Analysis	Typical Value	Method
Viscosity at 50 °C, mPa.s	470	ASTM D2196-9 9
Acid value, mg KOH/g	60	ASTM D 465-01
Ash, %	0.3	SCAN T 4:66
Sulphur, %	0.3	SCAN D 4239-00
Moisture, %	0.1	ASTM D 1364-95
Nitrogen, %	0.05	According to LECO
Flash Point, °C	150	ASTM 93-80
Pour Point, °C	15	ASTM 93-80
Density at 50 °C, kg / m³	950	SCAN D 2500-99
Heat Value, MJ / kg (effective)	38	ASTM D 4809-95

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UCY-TOF40
Product Datasheet
Item number: 10-002

General Information

UCY-TOF40 is a bio-fuel made from tall oil pitch and other oil distillates. It is used as a low-sulfur-substitute of heavy fuel oils, mainly in power plants.

Typical properties of UCY-TOF40

Analysis	Value	Specification
Acid Value	100	max. 130
Viscosity at 50°C, mPa.s. (cP)	400	max. 600
Sulphur, %	0.35	max. 0.4
Ash, %	0.35	max. 0.4

Product handling

UCY-TOF40 should be delivered at around 50 ℃ and the recommended minimum storage temperature is 40 ℃. If **UCY-TOF40** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation or crystallization. This is a normal characteristic and not a defect. If affected, the material should be gently heated to around 75 ℃ and circulated or agitated to restore the clear and bright condition.

Delivery form

Preferably bulk liquid in road tanker, rail tank wagon, ISO-container. Delivery in flexitanks, steel drums and IBCs is possible subject to product handling considerations above.

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UCY-TOF60
Product Datasheet
Item number: 10-003

General Information

UCY-TOF60 is a bio-fuel made from tall oil pitch and other oil distillates. It is used as a low-sulfur-substitute of heavy fuel oils, mainly in power plants.

Typical properties of UCY-TOF60

Analysis	Value	Specification
Acid Value	100	max. 130
Effective Heat Value ASTM D240 (°C)	38	
Viscosity at 50°C, mPa.s. (cP)	400	max. 600
Sulphur, %	0.35	max. 0.4
Flash Point, °C	150	min. 100
Ash, %	0.5	max. 0.6

Product handling

UCY-TOF60 should be delivered at around 50 ℃ and the recommended minimum storage temperature is 40 ℃. If **UCY-TOF60** is subjected to cold temperatures during storage or transportation it may become cloudy or show some precipitation or crystallization. This is a normal characteristic and not a defect. If affected, the material should be gently heated to around 75 ℃ and circulated or agitated to restore the clear and bright condition.

Delivery form

Preferably bulk liquid in road tanker, rail tank wagon, ISO-container. Delivery in flexitanks, steel drums and IBCs is possible subject to product handling considerations above.

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Register court: Bonn
Tax number: 222/5719/235
VAT-ID: DE 2 39 98 81 54
Managing Director: Thilo Schneider

UCY-TOR-85
Product Datasheet
Item number: 10-014

General Information

UCY-TOR-85 is unmodified tall oil rosin (TOR) product with a just right content of abietic type rosin acids for various purposes.

UCY-TOR-85 is an excellent base rosin to be upgraded for various end uses like paper sizes, printing ink binders, rubber production and adhesive resins.

Specification of UCY-TOR-85

Analysis	Value	Method
Acid value	min. 165	SCAN-T 11:72
Colour, US Rosin standards	max. WG	ASTM D 509-98
Free rosin acids, %	min. 85	SCAN-T 14:78
Softening point, Mettler cup & ball, °C	min. 58	SCAN-T 13:74

Typical analyses of UCY-TOR-85

Analysis	Value	Method
Acid value	171	SCAN-T 11:72
Colour, US Rosin standards	X	ASTM D 509-98
Free fatty acids, %	4	ASTM D 5974-00
Free rosin acids, %	88	SCAN-T 14:78
Softening point, Mettler cup & ball, °C	61	ASTM D 6090-99
Unsaponifiables, %	5	SCAN-T 13:74

Product handling

Melting of solid rosin requires temperatures above 150 ℃ in order to avoid crystallization. For storing liquid rosin thermal insulated tanks and equipment to maintain temperature between recommended 150 and 200 ℃ are necessary.

Delivery form

Preferably bulk molten form (hot liquid) in road tanker or ISO-container.

Disclaimer:
In all applications of **UCY-TOR-85** it is the sole responsibility of the buyer to respect and comply with any valid intellectual property rights of third parties.

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UCY-TOR-90
Product Datasheet
Item number: 10-015

General Information

UCY-TOR-90 is unmodified tall oil rosin (TOR) product with a just right content of abietic type rosin acids for various purposes.

UCY-TOR-90 is an excellent base rosin to be upgraded for various end uses like paper sizes, printing ink binders, rubber production and adhesive resins.

Specification of UCY-TOR-90

Analysis	Value	Method
Acid value	min. 170	SCAN-T 11:72
Colour, US Rosin standards	max. WW	ASTM D 509-98
Free rosin acids, %	min. 88	SCAN-T 14:78
Softening point, Mettler cup & ball, °C	min. 63	ASTM D 6090-99

Typical analyses of UCY-TOR-90

Analysis	Value	Method
Acid value	174	SCAN-T 11:72
Colour, US Rosin standards	XA	ASTM D 509-98
Free fatty acids, %	4	ASTM D 5974-00
Free rosin acids, %	90	SCAN-T 14:78
Softening point, Mettler cup & ball, °C	65	ASTM D 6090-99
Unsaponifiables, %	4	SCAN-T 13:74

Product handling

Melting of solid rosin requires temperatures above 150 ℃ in order to avoid crystallization. For storing liquid rosin thermal insulated tanks and equipment to maintain temperature between recommended 150 and 200 ℃ are necessary.

Delivery form

Preferably bulk molten form (hot liquid) in road tanker or ISO-container.

Disclaimer:
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UCY-RS-35-90
Product Datasheet
Item number: 10-016

General Information

UCY-RS-35-90 is a rosin soap used as pulp washing aid with excellent depitching properties in mixed wood pulp production.

Specification of UCY-RS-35-90

Analysis	Value	Method
Rosin acids in raw material, %	87 - 93	SCAN-T 14:78
Soap content, %	34 - 36	LL 123:03

Typical analyses of UCY-RS-35-90

Analysis	Value	Method
Rosin acids in raw material, %	88	SCAN-T 14:78
Soap content, %	35	LL 123:03
NaOH, %	0 – 0.2	SFS 3789

Product handling

UCY-RS-35-90 should be delivered at around 80 ℃ and it is recommended to be stored in approx. the same temperature.

Delivery form

Preferably bulk liquid in road tanker or ISO-container.

Disclaimer:
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Crude Tall Oil – Mixed wood Tall Oil (MTO), grade 1

Product Datasheet

Item number: 10-008

General information

Crude Tall Oil is a viscous oily liquid of brown and dark brown color with unpleasant odor. The oil composition depends on the wood species when cooking the sulfate pulp. The properties of the product depend upon the Kraft cooking process raw material, which can be:

a) Soft wood – Soft wood Tall Oil (STO)
b) Hard wood – Hard wood Tall Oil (HTO)
c) Mixed wood – Mixed wood Tall Oil of 1st and 2nd grades (MTO)

Crude tall oil is a natural blend of resin and fatty acids, neutral and oxidized substances. Resin acids are high-molecular unsaturated acids of cyclic diterpene structure. Main acids are abietic and primaric ones.

Fatty acids are high-molecular, mainly unsaturated carboxylic acids of linear structure with different unsaturation degree. Main acids are oleinic acid, linoleic acid and their isomers. There is also a dash of saturated acids such as palmic acid, stearic acid and others. Unsaponifiable substances are aliphatic hydrocarbons, terpenic compounds, phenols and others.

Tall oil is insoluble in water, soluble on organic solvents, non-toxic.

Specification and typical analysis

Properties	**Standard MTO 1st grade**	**Typical analysis**
Appearance	brown or dark brown color oily liquid	
Acid number, mg KOH per 1 g of product	min. 130	144
Resin acids, % wt.	min. 30	35
Unsuponifiable matter, % wt.	max. 18	11
Lignin and solid particles, %, wt.	max. 2	0,4
Mass part of fatty acids, resin acids and Unsuponifiable matter, %	not determined	not determined
Water, % wt.	max. 2	1,8
Ash content, %, wt.	not determined	0,1

Delivery form

The product is usually supplied in tank containers or flexi tanks.

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Crude Tall Oil – Mixed wood Tall Oil (MTO), grade 2

Product Datasheet

Item number: 10-010

General information

Crude Tall Oil is a viscous oily liquid of brown and dark brown color with unpleasant odor. The oil composition depends on the wood species when cooking the sulfate pulp. The properties of the product depend upon the Kraft cooking process raw material, which can be:

a) Soft wood – Soft wood Tall Oil (STO)
b) Hard wood – Hard wood Tall Oil (HTO)
c) Mixed wood – Mixed wood Tall Oil of 1st and 2nd grades (MTO)

Crude tall oil is a natural blend of resin and fatty acids, neutral and oxidized substances. Resin acids are high-molecular unsaturated acids of cyclic diterpene structure. Main acids are abietic and primaric ones.

Fatty acids are high-molecular, mainly unsaturated carboxylic acids of linear structure with different unsaturation degree. Main acids are oleinic acid, linoleic acid and their isomers. There is also a dash of saturated acids such as palmic acid, stearic acid and others. Unsaponifiable substances are aliphatic hydrocarbons, terpenic compounds, phenols and others.

Tall oil is insoluble in water, soluble on organic solvents, non-toxic.

Specification and typical analysis

Properties	**Standard MTO 2nd grade**	**Typical analysis**
Appearance	brown or dark brown color oily liquid	
Acid number, mg KOH per 1 g of product	min. 120	130
Resin acids, % wt.	min. 20	24
Unsuponifiable matter, % wt.	max. 20	19
Lignin and solid particles, %, wt.	not determined	0.9
Mass part of fatty acids, resin acids and neutral substances, %	min. 91	96
Water, % wt.	2	1.4
Ash content, %, wt.	not determined	not determined

Delivery form

The product is usually supplied in tank containers or flexi tanks.

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