Moreover, the polyamides to be recycled may be to a large part hydrolyzed and thus not extrudable. In this case, they must be exposed to a high vacuum (with addition of a catalyst if necessary) to increase their viscosity and make them extrudable.

It is thus necessary to be able to provide a composition which, firstly, can be extruded in complete safety for the manipulator (no release of toxic gases) and, secondly, to obtain all types of extruded parts that are stable over time (no exudation).

In one aspect, the present disclosure refers to an extrusion composition comprising, by weight:

a) from 35% to 100%, in particular from 35% to 96.9%, of at least one semicrystalline aliphatic polyamide PA1 comprising at least 30%, in particular at least 50%, of recycled semicrystalline aliphatic polyamide PA2 originating from used or end-of-life pipes which have been used in the exploitation of offshore or onshore oil or gas deposits, in particular offshore deposits, said recycled semicrystalline aliphatic polyamide PA2 having undergone a washing and/or compounding step after removal and shredding in the form of granules of said pipe;

b) from 0 to 65%, in particular from 0 to 10%, of at least one reinforcing fiber;

c) from 0 to 40%, in particular from 3% to 30%, of at least one impact modifier;

d) from 0 to 30%, in particular from 0 to 15%, of a filler;

e) from 0 to 10%, in particular from 0.1% to 5%, of at least one additive;

the sum of the components a + b + c + d + e is equal to 100%,

the inherent viscosity of said composition, as determined according to ISO 307:2007 in m-cresol at 20°C, being greater than or equal to 1.2 dl/g, notably in the range 1.2 dl/g to 1.7 dl/g.

In another aspect, the present disclosure refers to a process for preparing a recycled semicrystalline aliphatic polyamide as defined above, characterized in that it comprises, after removal and shredding in the form of granules of used or end-of-life pipes from the exploitation platforms of offshore or onshore oil or gas deposits, in particular offshore deposits, a step of washing and/or compounding of said semicrystalline aliphatic polyamide PA2.

In another aspect, there is provided the use of a composition as defined above for preparing articles obtained by extrusion.

In another aspect, the present disclosure refers to A process for preparing a monolayer or multilayer pipe, characterized in that it comprises a step of extruding a composition as defined above.

The present disclosure thus relates to an extrusion composition comprising, by weight:

a) from 35% to 100%, in particular from 35% to 96.9%, of at least one semicrystalline aliphatic polyamide PA1 comprising at least 30%, in particular at least 50%, of recycled semicrystalline aliphatic polyamide PA2 originating from used or end-of-life pipes which have been used in the exploitation of offshore or onshore oil or gas deposits, in particular offshore deposits, said recycled semicrystalline aliphatic polyamide PA2 having undergone a washing and/or compounding step after removal and grinding in the form of granules of said pipe;

b) from 0 to 65%, in particular from 0 to 10%, of at least one reinforcing fiber;

c) from 0 to 40%, in particular from 3% to 30%, of at least one impact modifier;

d) from 0 to 30%, in particular from 0 to 15%, of a filler;

e) from 0 to 15%, in particular from 0.1% to 10%, notably from 0.5% to 5%, of at least one additive;

the sum of the components a + b + c + d + e is equal to 100%,

the inherent viscosity of said composition, as determined according to ISO 307:2007 in m-cresol at 20°C, being greater than or equal to 1.2 dl/g, notably in the range from 1.2 dl/g to 1.7 dl/g.

The Inventors have thus found that adding a recycled polyamide PA2 derived from used or end-of-life pipes used for the exploitation of onshore or offshore oil or gas deposits, in particular offshore deposits, to a virgin polyamide PA1 to obtain an extrudable composition without releasing noxious or toxic gases (safety for the manipulator), for the production of all types of extruded parts which do not exude or which exhibit low exudation. The compositions of the disclosure have good mechanical properties, allowing improved quality and productivity of welds between two parts.

The exploitation of offshore or onshore oil or gas deposits uses flexible pipes to connect the various offshore or onshore devices, respectively, of the platform and for conveying the extracted hydrocarbons.

These pipes must withstand oil which is hot, gas, water and mixtures of at least two of these products for periods of time which may be up to 20 years.

The term “used” means that the pipe has already been used in the exploitation of oil or gas deposits, whether offshore or onshore, but has not yet reached its operating limit of up to 20 years. When a platform ceases production and is dismantled, this type of pipe, which has has not yet reached the end of its useful life, needs to be recycled.